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# Worldwide Report

EPIDEMIOLOGY

No. 304

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ANGOLA

BRIEFS

POLIO VACCINATION STATISTICS--A total of 900,899 children up to 5 years of age were vaccinated in the entire country against infantile paralysis during the fifth vaccination campaign that was completed recently. According to data included in a report published yesterday by the Ministry of Health, these numbers correspond to 78.46 percent of the goal initially envisioned, which was 1,148,200 children. Also according to the report, the provinces of Luanda, Huambo and Kwanza-Sul exceeded the 100,000 mark, vaccinating 166,227, 123,226 and 111,461 children respectively. The provinces of Zaire, Cabinda and Namibe took third place, with 16,020, 13,683 and 6,010 vaccinations respectively. Statistics regarding the provinces of Moxico, Cunene and Kuando-Kubango were not included in the report. It should be noted that the provinces of Luanda, Kwanza-Sul, Lunda-Norte and Bengo exceeded the goals initially forecast. [Text] [Luanda JORNAL DE ANGOLA in Portuguese 3 Nov 82 p. 2]

CSO: 5400/65

ARGENTINA

COMMON BEDBUG FOUND TO BE TRANSMITTER OF CHAGAS DISEASE

Buenos Aires CLARIN in Spanish 26 Oct 82 p 26

/Text/ The common chinch or bedbug is an excellent carrier of *Tripanosoma cruzi*, a parasite that brings about Chagas disease and can be inoculated against in humans with a probability index very similar to that of the winged bedbug, according to Drs Miguel Eduardo Jorg and Odo Ngumo Natula, after a long laboratory research.

Both researchers--Dr Ngumo Natula is on a fellowship in Argentina--arrived at that conclusion after various experiments that the *Cimex lectularius* (the domestic "bedbug") can act as a carrier of Chagas disease which is widespread in our country, due to the ease with which *Tripanosoma cruzi*, the long lasting infestation and high incidence of transmission was proven in laboratory animals.

The experiment started with breeding 20 bedbugs, gathered in a quarry workers' camp, which were all infected on being put in contact with camp rats, natural transmitters of *Tripanosoma cruzi*.

Later the insects were placed together with 30 white rats, 29 of which were contaminated by bedbug bites. After two weeks, 22 of the rats were still showing the presence of the microorganism in their blood; only four overcame the parasite after 22 days and three still showed up positive 30 days after having been bitten.

Another alarming aspect of the experiment is that the bedbugs remained infected for more than 320 days and they likewise revealed a great resistance to starvation: 92 days in some cases.

The authors of the experiment are known through several articles related to the topic and they have published the results of their latest research in LA PRENSA MEDICA ARGENTINA (The Argentine Medical Press), a specialized magazine.

At that time, the existence of severe cases of the disease in people who lived in housing and zones not invaded by the winged bedbug was verified.

In these houses, on the other hand, household bedbugs which--it is presumed--could be carriers of the parasite that causes the disease were found.

Only now, after laboratory experiments, was proof confirmed that bedbugs are at least able to be suitable carriers of *Tripanosoma*.

Chagas disease, as is known, is an endemic illness in Central and South America. A large part of our country is infected with the disease which in its chronic stage causes cardiac and nervous symptomatology.

CLARIN talked with the Association for the Fight against Chagas Disease (ALCHA) on the subject and a physician, belonging to the directorate of that organization, gave this statement on its behalf.

"Doctor Jorg--the ALCHA director stated--is deserving of all the trust due a large number of scientific works linked with Chagas disease. As for the other professional, I have no word, but the fact of having signed up to work jointly with Doctor Jorg allows one to assume scientific seriousness," he said.

That exception having been made, he said that "given the background of one of the signers, one can suppose that it is certain that the common bedbug can be a carrier of the disease since it has the same characteristics as the winged bedbug: it is a bloodsucker."

Finally, the ALCHA director praised the work subscribed to by Doctors Jorg and Natula since, in accordance with what he said, "in this way we discovered a new transmitter of the disease which will permit looking at new forms of fighting, prevention and research into Chagas disease."

9908  
CSO: 5300/2025

AUSTRALIA

BRIEFS

HEALTH CAMPAIGN FUNDING--Federal health authorities are co-ordinating a national campaign this summer to prevent outbreaks of Australian encephalitis and other mosquito-borne diseases. The federal Minister for Health, Mr Carlton, said yesterday the Commonwealth had allocated \$194,000 to the campaign--\$63,000 for national projects and \$131,000 to six States for mosquito control programs funded on a dollar-for-dollar basis. The encephalitis virus was continually present in the tropical north of Australia and could, under certain weather conditions, spread to other receptive areas and so create the potential for outbreaks. [Text] [Canberra THE AUSTRALIAN in English 14 Oct 82 p 3]

CSO: 5400/7514

BANGLADESH

BRIEFS

DIARRHOEA, CHOLERA DEATHS--Dhaka, Oct 27--About 400 people have so far died during the past one month because of cholera and diarrhoea in the Mymensingh, Rangpur, Comilla and Jessore district of Bangladesh reports PTI. According to newspaper reports during the past few days, the number of deaths in the Netrokona and Gaffagan areas of Mymensingh would be around 200. Many deaths also occurred in Rangpur and Comilla. The English daily, New Nation, reported yesterday that, diarrhoea and cholera in "epidemic form" had claimed 125 lives in Jessore in the last few days. The newspaper, quoting unofficial sources, however, put the death toll in this district at 250. Prices of saline and other medicines required for treatment of cholera, the daily said, had shot up. A bottle of saline was being sold at Taka 40 to Taka 50, against the normal price of Taka 19, it added. The newspaper further said that, reports from affected areas of the district indicated "prevalence of a near-famine condition because of the failure of aus and aman crops." [Text] [Calcutta THE STATESMAN in English 28 Oct 82 p 5]

CSO: 5400/7041

CUBA

BRIEFS

STUDENTS VACCINATED AGAINST RUBELLA--More than 12,000 7th through 9th grade female students of the basic urban and rural secondary schools in Camaguey Province have been immunized against German measles according to a vaccination campaign being implemented in the country for the first time. The results of the first 7 days of the campaign correspond to the municipalities of Sierra de Cubitas, Esmeraldas, Carlos Manuel de Cespedes, Florida, Vertientes, Nuevitas and Minas. The program does not have anti-epidemic purposes, but is solely preventive. German measles is generally a benign disease but if a woman contracts it during the initial months of gestation, the fetus could be malformed. The vaccine immunizes for life. The vaccination campaign is being carried out by two public health groups that utilize modern methods, which injects the vaccine under pressure and without pain. [Text] [FL181904 Havana Domestic Television Service in Spanish 1800 GMT 18 Nov 82]

CSO: 5400/2009

TSE-TSE FLY IS ADAPTING TO HIGHER ALTITUDES, SAYS EXPERT

Addis Ababa THE ETHIOPIAN HERLAD in English 7 Nov 82 pp 1, 6

[Text]

The tse-tse fly, the insect responsible for the transmission of the cattle disease known as trypanosomiasis, is adapting itself to new habitats at higher altitudes than ever previously recorded, on the basis of a finding made by an Ethiopian specialist.

Comrade Getachew Tikabet, a lecturer at the Department of Biology in the Faculty of Science of Addis Ababa University, told the *Ethiopian Herald* in an interview yesterday, that the said tse-tse flies were found in Fincha Valley, Wollega region. He said the tse-tse flies were located at a record height of about 2,200 metres above sea level along the escarpment of the valley, where they were surviving and breeding successfully.

Comrade Getachew described the species as *Glossina morsitans ugandensis* whose altitudinal limit in Ethiopia was 1,650 metres above sea level and 1,700 metres above sea level in other parts of Africa. The tse-tse fly-borne disease known as nagana, is preventing livestock production in vast areas of tropical Africa by causing rapid death or either extreme debility and low production. Gendi is the name given to the disease in Ethiopia.

In a further elaboration, Comrade Getachew said so far the highest altitude limit in which the tse-tse fly sur-

vived in any part of the world has been 1,800 metres above level. Referring to the discovery of the tse-tse flies at 2,200 metres height, Comrade Getachew stressed that further studies would have to be carried out to establish the genetic constitution of the new variety. He said the flies were found following a year-long survey conducted between August 1980 to August 1981.

Comrade Getachew said tse-tse flies normally survived at a known temperature gradient, which is measured indirectly by altitude. He said the tse-tse-borne disease or trypanosomiasis has been accepted as a lowland disease. He noted that the latest finding of the tse-tse flies climbing to higher altitudes might mean exposure of fresh highland areas to the danger of trypanosomiasis. He said that cattle have been pushed out of the Fincha valley by the disease and those found in the escarpment have been infected by trypanosomes.

Comrade Getachew said that extensive research work has been conducted over a long period of time to study and control the tse-tse fly as well as the disease caused by it. He said the first studies were done as far back as 1895 and that since then various control strategies were devised that proved

partly successful. He said on the whole the problem still remains serious in many parts of tropical Africa.

### Control Methods

Comrade Getachew enumerated the different methods employed to control the flies and the disease transmitted by them. These include vector control by means of insecticides, bush-clearing and biological control methods. He said chemotherapy and chemoprophylaxis were also used to control the disease. He said the latest strategy used to fight the disease include the production of cocktail vaccines, which is done by the International Laboratory for Animal Diseases in Nairobi, Kenya, and trypanotolerance done by the International Livestock Centre for Africa (ILCA), based in Addis Ababa.

Comrade Getachew who is specialising in tse-tse fly ecology and trypanosomiasis, informed the *Ethiopian Herald*, that the survey in the Fincha valley was undertaken at the request of peasants that complained about the Gendi disease, some two years ago. He said at the time he was carrying on field work on medical entomology.

course. This was how the whole thing got started, he added.

Comrade Getachew received financial and material assistance for his field studies from SAREC, a Swedish organization through the Department of Biology of Addis Ababa University. The advisor for the project is Dr. Teferi Gemetchu, Head of the Biology Department.

In connection with this new finding, Comrade Getachew had visited Nairobi, where he underwent a two-month advanced training on tse-tse fly, trypanosomiasis and animal production. The scheme was sponsored by ILCA. While in Nairobi he conducted a two-day seminar on his new discovery.

Before the end of the current year, Comrade Getachew Tikubet, will start work on a project entitled — "Tse-tse Challenge, Animal Productivity and Trypanosomiasis in Ethiopia," which will be jointly supported by the Addis Ababa University and ILCA. The purpose of the project is to assess animal productivity in a tse-tse fly-infested area and the upper Omo River valley has been selected for the project, which is expected to last two years.

CSO: 5400/63

GHANA

BRIEFS

CHOLERA AT ASANTE AKIM--THIRTEEN people have died as a result of a cholera outbreak in five towns in the Asante Akim district. The affected towns are Nya-boe, Pekyerekye, Obogu, Asankare and Patriensa. This has caused a general ban to be placed on funeral celebrations and other gatherings in the district. Briefing the "Graphic" at his office yesterday, Mr R. R. Owusu, Principal Superintendent of Health in charge of the district said 94 cases have so far been reported at the Konongo-Odumasi Mines Hospital, the Agogo Presbyterian Hospital and Sabs Hospital at Konongo. Affected houses, he said, have also been disinfected by officials of the Ministry of Health in the district. Mr Owusu disclosed that the public have been advised to boil their drinking water and to adhere strictly to personal and environmental hygiene. Meanwhile, a radio panel discussion to educate the people on the disease and how to prevent it has been started at the Konongo Broadcasting relay station by personnel from the Ministry of Health and the Ghana Education Service branches at Konongo.

[Yaw Barimah] [Text] [Accra DAILY GRAPHIC in English 3 Nov 82 p 8]

CSO: 5400/62

HONDURAS

INFANT MORTALITY TO DECREASE

Tegucigalpa LA TRIBUNA in Spanish 23 Sep 82 p 25

[Text] The infant illness and mortality rate in Honduras which is currently at 118 children per 1000 births, will be reduced by more than 50 percent in 1984 or less than 60 per 1,000 live births, according to a report to LA TRIBUNA by Saady Oscar Bueso, head of the health services brigades of the Ministry of Public Health.

"The efforts of the brigades," he explained, "will focus on children from birth to 2 years of age because they are most vulnerable to illness and death at that age. The illness and mortality rate is currently a frightening 118 per live births. The situation is serious, but we are succeeding in combatting it to the extent that by 1984 we expect the rate to drop by more than 50 percent."

Bueso reported that the brigades were formed in 1978 and 1979, having as their starting point an International Development Agency program which had only five permanent areas as its sphere of action, ignoring the other areas of the country.

He explained that the brigade program was founded on a more dynamic social concept which involves recognizing the existence of marginal areas in large cities where people are usually rejected by the state hospitals and resolving crises by bringing assistance directly to them.

According to Bueso, this marginal population not only receives medical attention but also instruction in community development and environmental sanitation involving large-scale construction of latrines.

In the marginal and rural areas the brigades carry out extensive immunization and oral hydration programs every weekend to prevent children dying from diarrhea. Tuberculosis cases are detected and areas which are in urgent need of medical care are pinpointed, such as the 10,000 cases of leishmaniasis in El Paraíso.

He said that the program also includes medical care for pregnant women with diabetes, heart problems, malnutrition, kidney damage and hepatitis as well as a rural sanitation project directed at community leaders and providing

care in certain areas with mobile units which are also utilized in cases of natural disaster.

Bueso said that beginning this year, the program is authorized by the liberal government, its effectiveness having been proved between 1979 and 1980 when it provided care for more than a million people.

Currently the brigades are providing care for a total of 850,000 people, mainly children, and have performed more than 254,000 dental extractions. It is expected that by the end of the year, 1.3 million people will have received care.

In 1983 the program is designed to provide care for 2 million people and 3 million in 1984, mainly children from birth to 15 years of age.

Bueso concluded by saying that the project was put into operation at the express order of President Roberto Suazo Cordova.

9787  
CSO: 5400/2006

HONDURAS

BRIEFS

LEISHMANIASIS IN EL PARAISO--Tegucigalpa--About 10,000 people in the El Paraíso district, located in the eastern part of the country, are victims of leishmaniasis, a disease commonly known as acne disease because in its initial stages, it appears as purulent pimples on the face, causing extreme pain as it exposes the tissue to the open air. According to Oscar Saady Bueso, head of the medical services brigades of the Ministry of Public Health and Social Assistance, the disease is difficult to cure, either killing its victims or deforming the facial features. The spokesman said that the disease has broken out in the area bounded by the right bank of the Patuca River, the village of El Chichicaste, Jutiapa, Las Trojes and Arenales on the Nicaraguan border. Bueso reported that the disease also attacks the bones of the lower extremities, the pancreas and the liver and that victims of the disease die if not cared for immediately. The drug for counterattacking the disease is not currently available. It is manufactured only in Brazil and France where orders have been placed for 5000 treatments, each one containing 15 doses. Bueso concluded by stating that the people of that region are also victims of tuberculosis and malaria, and it is said that the cursed trio exists in El Paraíso. [Text] [Tegucigalpa LA TRIBUNA in Spanish 23 Sep 82 p 25] 9787

HEPATITIS OUTBREAK--San Pedro Sula--An epidemic outbreak of hepatitis was recently discovered at the private San Juan Bosco School in Colonia Ideal in this city. The cases warrant urgent intervention by public health authorities. The disease struck the first child this week, but since there was only one case, it was assumed to be some type of fever or vomiting brought on by a temporary illness. Now the number has increased to six, and clinical tests indicate that the hepatitis is involved. Apparently the public health services do not have the necessary vaccine available to immunize the students who have not been attacked by the disease, so it will be necessary to rely on private doctors who are charging 40 to 50 lempiras for each immunization. Public health officials and the City of San Pedro Sula have demonstrated a great deal of indifference to offering assistance to the school in that stagnant water is left by rains, mainly because city officials dump all of the rain water in the colony where the school is located. The San Juan Bosco educational center is private, but like public schools, it deserves assistance from those responsible for providing good public service, and furthermore, it charges monthly fees which are relatively low in comparison to other schools. [Text] [San Pedro Sula LA PRENSA in Spanish 2 Oct p 25] 9787

RABIES DEATHS--Tegucigalpa--Rabies has left 10 people dead in this city according to Dr Eleazar Ramos, veterinarian for the department of epidemiology, an agency of the Ministry of Public Health. These people lost their lives because of a lack of concern on the part of family members who did not advise the proper authorities when the victims were bitten by rabid dogs at a time when an epidemic is ravaging the animals of Tegucigalpa. Faced with that situation, Ramos explained that the public health department of epidemiology today is initiating a large-scale immunization program for dogs and cats for the purpose of erradicating the epidemic. The organizers of the immunization campaign, which is the responsibility of the Alonzo Suazo metropolitan area of the central district police jurisdiction for the Ministry of Public Health, are calling for dog and cat owners to have their animals vaccinated. Dr Eleazar stated that the purpose of the program is to have all dogs and cats vaccinated, or if necessary, destroyed. All suspicious animals will be placed under observation in order to take the necessary steps to protect the health of the community of Tegucigalpa. He said that the 10 cases resulting in death have been discovered throughout the country, so the campaign will be waged at the national level. [Excerpt] [Tegucigalpa LA PRENSA in Spanish 4 Oct 82 p 56] 9787

TREATMENT FOR LEISHMANIASIS--Nueva Palestina--Olancho (Patuca zone)-- Hundreds of peasants of all ages, both men and women, and all without any education, waited patiently in long lines for treatment by the governmental medical team in this locality of southern Olancho. The people have been afflicted in recent months by leishmaniosis ("grano maldito"). The same thing was occurring in Arena Blanca, where the presidential medical mission treated more than 400 sick persons from El Portal del Infierro, Los Prados, Cuyamel, and El Tigrito, and where there was a "likeable" patient who, even though suffering from an ulcerated sore on his forehead, refused to receive any medicine, "because I belong to the Prince of Peace (a religious congregation)." "Grano maldito" is a disease known scientifically as leishmaniosis and affects the skin. In accordance with the version of specialists, the northeastern part of Honduras has become an endemic area, where the inhabitants are suffering from an acute lack of vitamins. Fausto Lara Galvan, coordinator of the presidential medical team that visited the area this past week, commented that "the disease has become a scourge for these people. Entire families are suffering from it, with sores on their legs, arms, and faces." It is well known that in Nueva Palestina and Arena Blanca, and in general the entire Patuca zone, there is no health service. Diseases like malaria, paludism, and respiratory ailments seriously afflict the people of all ages. In Nueva Palestina the presidential envoys treated more than 1,000 persons, mostly children. This locality, including its surrounding area, has an estimated population of 10,000 persons who depend on the agriculture that is carried out by 23 cooperatives. Ignacio Reyes said that "the aid that we receive from Juticalpa is practically useless. They came some time ago to build a health center that is of no use because it was not inaugurated." At the conclusion of their mission the team members emphasized the need for the government to turn its eyes to this area..."where everything is lacking".... [Text of excerpts] [Tegucigalpa LA TRIBUNA in Spanish 16 Oct 82 p 16] 8255

EXPERTS TALK TO PRESS ON HEALTH PROBLEMS IN BENGAL

Calcutta THE STATESMAN in English 20 Oct 82 p 3

[Text]

DR Jaladhi Sarkar, member of the Expert Panel on Virology, WHO, told a Press conference in Calcutta on Tuesday that since people would have to co-exist or live with Japanese encephalitis because of its peculiar epidemiology, effective steps should be taken to lower the incidence of this disease. It had recorded about 40% mortality in West Bengal.

A former professor of virology, Tropical School of Medicine, Calcutta, Dr Sarkar suggested that a special cell be set up under the Health Directorate exclusively for Japanese encephalitis. The cell, he said, would study various problems related to the disease such as identification of mosquito species prevalent in the endemic foci and investigation of sources of infection in birds and animals.

Dr Mahish Shekhar Chakravarti, professor of virology, Tropical School of Medicine, said that the disease was mainly a rural one and people living in insanitary conditions with pigs and cattle were vulnerable. Since some unknown factors were yet to be identified, effective measures had to be taken to eradicate mosquitoes which carried the disease. Vaccination at the time of large scale outbreaks was no remedy, he said.

Dr Satyendra Kundu, president of the Bengal State branch of the Indian Medical Association, who was also present at the Press conference, said the Government did not seem to be serious about the disease even after its annual recurrence and high mortality. More than 400 people were affected by the disease in different districts this year. Out of them about 200,

most of them in the age group of 5 to 20, died. He said the Union Government should go in for mass production of the vaccine and make it available to the people at a cheaver rate. The IMA was prepared to cooperate with the Government in its scheme for a sustained campaign to control the disease.

Dr Kundu was not happy at the complacent manner in which the State Government and the Centre were tackling the problem of malaria. Officially about 44,000 people were affected by malaria in West Bengal during the past two years. However, private practitioners are of the view that the incidence of the disease must be at least 10 times more and that rest of the cases were not recorded. Apart from spraying DDT in the rural areas and larvical oil in cities, steps should be taken to open more centres for examination of blood. He expressed concern over the incidence of malignant malaria in some areas of Purulia and Jalpaiguri. Kala Azar was another dreadful disease which had affected people in Malda and Murshidabad. A few cases had been recorded in areas adjoining Calcutta. He welcomed

the suggestion by Dr Chakravarti to vaccinate pigs because they were one of the main sources of Japanese encephalitis.

Our Correspondent in Midnapore adds: Reports of three more deaths from encephalitis were received from Kespur and Kharagpur areas by the district health office in Midnapore on Tuesday night. This brings the encephalitis toll in the district to 31. Fresh cases were also reported from Binpur Block II

CSO: 5400/7038

## BRIEFS

MIDNAPORE ENCEPHALITIS DEATHS--Midnapore, Nov 2--Reports of seven more deaths from encephalitis have been received from Jhargram today, according to official sources here raising the toll to 14 in the sub-division and 38 in the district, during the past two months. Patients were being admitted to the Jhargram Hospital from all the blocks, including Gopi-Ballabhpur and Binpur, almost every day. People in Jhargram are reportedly feeling panicky about the spread of the disease. There was, however, no report of people having left Jhargram town. Two senior officials of the district health department have been camping in Jhargram for the past two days. But there are complaints of inadequate preventive measures taken by the Health Department. Only four teams are now engaged in the preventive drive in Jhargram town which has a population of 30,000 people. Members of local clubs have been engaged by the sub-divisional authorities in a town cleaning drive to prevent breeding of mosquitoes. [Text] [Calcutta THE STATESMAN in English 3 Nov 82 p 3]

ENCEPHALITIS REPORTED SPREADING--Encephalitis is spreading fast in Burdwan, Birbhum, Bankura and Midnapore where 413 people have died since August. Mr Ramnarayan Goswami, Minister of State for Health, said in Calcutta on Wednesday that 1,059 cases of encephalitis had been detected in these districts during the past three months. A senior official of the Central Health Services has come to Calcutta to make an on-the-spot survey of encephalitis deaths. The official left for Burdwan during the day. He will visit three other districts affected by the disease. The Minister said that the State Government had already distributed 10,000 cc of encephalitis vaccines in the four districts. He said that 20,000 cc of the vaccine would soon be imported from Japan by the State Government. [Text] [Calcutta THE STATESMAN in English 4 Nov 82 p 1]

MORE ENCEPHALITIS DEATHS--Arambagh, Oct 27--Two persons dies of encephalitis in Arambagh on October 22, according to Mr Sumantra Chaudhury, District Magistrate, Hooghly, here today. [Text] [Calcutta THE SUNDAY STATESMAN in English 31 Oct 82 p 4]

MORE ENCEPHALITIS REPORTED--Durgapur, Oct 19--Despite steps taken by different organizations to curtail the spread of encephalitis, the disease claimed another 64 lives during the past fortnight in Burdwan district. A senior Government officer who did not want to be quoted said yesterday that neither had the piggeries been segregated nor the khatals disinfected in the way they should have been. There had been no intensive of anti-mosquito oil. This was the reason for the spread of the "killer-disease." [Text] [Calcutta THE STATESMAN in English 20 Oct 82 p 16]

ENCEPHALITIS IN BENGAL--Calcutta, Oct 27--Some 305 people died of encephalitis in four West Bengal districts during the last five months, according to an official spokesman. It is apprehended that more deaths are likely to follow. Meanwhile, the Indian Medical Association has criticised the West Bengal Government for not taking concrete steps to contain it. [Text] [New Delhi PATRIOT in English 28 Oct 82 p 4]

ENCEPHALITIS IN ARAMBAGH--Arambagh, Oct 30--One more person died of encephalitis in the local hospital here yesterday, according to Dr Ranjit Mukherjee, Chief Medical Officer of Hooghly. This brings the death toll in Arambagh town to three. Dr Mukherjee said three people had been affected here by the disease since October 15. The Chief Medical Officer said two more people had been affected in the Dhaniakhali and Mogra areas of Hooghly. They had been admitted to the Chinsurah Imambara Government Hospital. Their condition was stated to be improving. [Text] [Calcutta THE STATESMAN in English 28 Oct 82 p 13]

CSO: 5400/7040

INDONESIA

BRIEFS

GASTROENTERITIS IN WEST SUMATRA--In the past few weeks at least 24 persons died of gastroenteritis in the Pagai Utara Selatan Subdistrict, Mentawai. It was reported that adults as well as children succumbed to the disease. Six adults and 10 children died in Taikoko Village, six adults and children died in Silabu Village, and two children died in Silowat. To keep the gastroenteritis epidemic from spreading, the Taikoko State Elementary School was closed on 11 September, and the teachers were evacuated to Silaoinan, located some 2 kilometers from the center of the epidemic. [Excerpts] [Jakarta MERDEKA in Indonesian 20 Sep 82 p 4] 6804

GASTROENTERITIS IN WEST JAVA--Gastroenteritis has reappeared in the Bandung Regency which had been declared free of the disease for some time. Intensive treatment was given 59 residents of the Pangalengan, Katapang and Gandsoli areas of the regency. Thus far no information has been obtained as to whether there have been any deaths. An Antara News Agency reporter, who checked several areas stricken by gastroenteritis, reported on Saturday [18 September] that the victims included children under 15 years of age and adults over 45 years of age. The disease also attacked these urban areas some time ago. At that time 1,759 cases were reported with 71 deaths. [Excerpts] [Jakarta MERDEKA in Indonesian 20 Sep 82 p 9] 6804

GASTROENTERITIS IN SOUTH SUMATRA--Twenty-two persons died of gastroenteritis in the Pasang Surut and Air Sugihan Transmigration Project, South Sumatra. They comprised 14 transmigrants in Komering Ilir (OKI) Regency and 8 in Musi Banyuasin (MUBA) Regency, who were included in the total 284 cases that developed in these two sites during the 4-day period, 12 to 16 September. Dr Alihusein of the South Sumatra Health Service, who heads a gastroenteritis surveillance team, reported these cases to the South Sumatra governor on Saturday [18 September]. He said his team was ordered to that area for 4 days and was replaced by another team. Each team is made up of four to five persons consisting of a doctor, paramedic, and assistants from the local transmigration area. The Pasang Surut Transmigration Project, which includes 18,000 families, lacks potable water every dry season. The Health Service judged that the area required "great vigilance" to prevent occurrence of the disease. Ideally two paramedics should be assigned to each residential block. According to Dr Alihusein, there were 1,211 cases as of 16 September, with 43 deaths, including one in Air Sugihan. Most cases and deaths occurred among transmigrants in the OKI and Musi Banyuasin Regencies. [Excerpts] [Jakarta KOMPAS in Indonesian 20 Sep 82 p 1] 6804

GASTROENTERITIS IN WEST KALIMANTAN--Gastroenteritis which hit Pontianak and which was linked to the water crisis has now subsided. The number of cases has been falling since 8 September. Prior to 8 September an average of 150 to 160 cases were treated in Pontianak hospitals each day. Since 8 September the average has dropped by 50 cases. A total of 2,411 cases was recorded as having been treated for gastroenteritis in Pontianak hospitals, with eight deaths. Dr Gunawan Hadibrata, chief of the Section for Guiding and Managing the Fight Against Contagious Diseases of the West Kalimantan Provincial Health Department, responding to a MERDEKA reporter's question in Pontianak on Saturday [18 September], stated, "The data on the decline in the number of gastroenteritis cases is really very heartening." It is expected that gastroenteritis will disappear if it continues to rain during the coming weeks. There are two reasons for the decline in the number of gastroenteritis cases, Dr Gunawan said. The first is that the city of Pontianak was deluged with rain on Thursday afternoon and Friday evening of last week and the drinking water crisis was relieved for Pontianak residents. The other reason is that since 11 September the Level II regional government of Pontianak City and its city health service launched a personal hygiene operation covering the use of Kapuas River water which was contaminated with Vibrio cholerae bacteria. This operation advised in particular that all food vendors who used river water to wash their dishes and glasses should mix it with PK to kill germs. Asked about the possibility of hemorrhagic fever breaking out in September and October, Dr Gunawan Hadibrata stated that six children had been treated for dengue fever at the hospital. [Excerpts] [Jakarta MERDEKA in Indonesian 23 Sep 82 p 4] 6804

GASTROENTERITIS AND DENGUE FEVER IN SAMARINDA--Gastroenteritis and hemorrhagic fever are "bogeymen" for residents of Samarinda especially during the dry season. August and September saw an increase in the number of cases of both of these diseases. Dr H. Soepangat, DKK [city health service] chief of Samarinda, pointed out that from January to mid-September 1,876 cases of gastroenteritis were recorded with 14 deaths. Of this total, 395 persons were treated in the hospital and 1,481 were treated on an outpatient basis. During the August to mid-September period more than 700 cases were recorded with 13 deaths. Hemorrhagic fever has also spread to several areas. From the beginning of August to mid-September 20 victims were recorded and 5 died. To control the ever increasing threat of the spread of these two diseases, a team has been formed and assigned to conduct an information campaign and control and other activities. In several hospitals and public health centers command posts have been established to provide immediate service to victims. Soepangat admitted that most victims live along the Karangmumus River in Samarinda Ilir. "But poor environmental sanitation is still the problem," he told KOMPAS. Another cause is the use of the Karangmumus River water for household purposes which of course is not good at all. Soepangat requested residents of that area not to use river water for washing their kitchen utensils, brushing their teeth or for drinking. Although the river is very dirty, Soepangat said, it still has not been ascertained definitely whether the disease that spread in the area is cholera or gastroenteritis. Meanwhile, residents of seven villages in the Tanjung Palas Subdistrict, Bulungan Regency, have suffered from gastroenteritis since the last week in August. Reports received state that during the last week of August there were 6 deaths among the 27 cases of this disease. [Text] [Jakarta KOMPAS in Indonesian 20 Sep 82 p 8] 6804

DENGUE FEVER IN WEST JAVA--In the past 8 months 304 persons in the West Java area were recorded as having died in a hemorrhagic fever epidemic. According to information gathered in an investigation conducted by the West Java Department of Health regional office, there were 2,097 cases of hemorrhagic fever since the end of August. The victims were scattered throughout 300 villages in the West Java region, Dr Rustandi, chief of the West Java Health Department regional office, told newsmen in Bandung yesterday [16 September]. In disclosing the results of the investigation which was conducted recently, Dr Rustandi said the hemorrhagic fever epidemic could be said to be spread evenly throughout West Java although most deaths occurred in Bogor Regency: 11 of the 66 persons who contracted the disease. The epidemic continues, in Bandung, Sumedang, Tasikmalaya, Bogor, and Karawang as well. According to Rustandi, the hemorrhagic fever initially occurred only in urban areas where the standard of living was relatively high compared with that in rural areas. Most victims were children under 15 years of age. The disease occurred for the first time in Indonesia in 1968 in Surabaya. It has now spread to almost all provinces in Indonesia. In West Java hemorrhagic fever first broke out among Bandung residents in 1973. The number of cases tended to increase but the number of deaths declined. [Excerpt] [Jakarta SINAR HARAPAN in Indonesian 17 Sep 82 p 1] 6804

DENGUE FEVER IN BOGOR--Fourteen children residing in Bogor, the capital city of West Java Province, died of hemorrhagic fever between January and September. A SINAR HARAPAN source in the Bogor City Health Service (DKK), who provided this information on 18 September, said hemorrhagic fever spread in the Bogor City area for the first time in 1975, in Ciwarining Abesin, Central Bogor Subdistrict. Each year, he said, ordinarily two to five but up to nine persons die of this disease. As of September of this year, 14 children were recorded as having died on the disease. Hemorrhagic fever is endemic to Bogor City, he said, where it breaks out from time to time with an increasing number of victims. Now, he said, hemorrhagic fever is found in all subdistricts in the Bogor administrative area, including New Bogor. The Bogor DKK side, he said, will attempt to control the disease through mass spraying and by forming organizations to carry out spraying. To organize these, the DKK side will train 1,638 volunteers to carry out the mass spraying program. These volunteers will be trained for 2 days and the mass spraying program for all of Bogor City will be carried out on 27 and 28 September. [Text] [Jakarta SINAR HARAPAN in Indonesian 21 Sep 82 p 3] 6804

MEASLES AND MALARIA IN BOYOLALI--Measles which is spreading in two Boyolali subdistricts, Andong and Boyolali City, has resulted in seven deaths. Some 100 persons are still ill with the disease. Meanwhile malaria reportedly is spreading in Karanggede and Wonosegoro Subdistricts, North Boyolali. The city health service (DKK) currently is monitoring the disease and is sending free drugs to the areas to be shared among the local inhabitants. [Excerpts] [Jakarta MERDEKA in Indonesian 24 Sep 82 p 7] 6804

CSO: 5400/8405

MALAWI

BRIEFS

RABIES THREATENS BLANTYRE--An emergency three-day dog tie-up order will be in force in the Capital City from November 3 to 5, a spokesman of the district Veterinary Office has said here. The order, aimed at killing all rabid, ownerless and roaming dogs, has been prompted by "many proved cases of people bitten by rabid dogs," the spokesman said in a press release. All dog owners are, therefore, advised to have their pets (dogs) tied up, the spokesman warned. "All ownerless and roaming dogs will be shot dead."--MANA [Text] [Blantyre DAILY TIMES in English 1 Nov 82 p 1]

CSO: 5400/58

DENGUE EPIDEMIC ABATING THROUGHOUT COUNTRY

Kuala Lumpur NEW STRAITS TIMES in English 10 Oct 82 p 9

[Text]

PENANG, Sat. — The State Director of Medical and Health Services, Dr C. Fonseka, today declared the dengue epidemic in the State over.

Meanwhile, the national Director of Health Services, Datuk Dr Ezaddin Mohamed, said the situation in the rest of the country is the same as that in Penang although he would not use the word "over".

He said the number of cases in the last two weeks was about five a day as compared to more than 40 cases daily during the height of the epidemic in late July and August.

The total number of deaths resulting from the fever from January to date is still 35.

He said although the number of cases has gone down, "preventive action must be continuous".

Datuk Dr Ezaddin also said that the Institute of Medical Research was now analysing the more than 2,000 reported dengue cases to confirm how many of them were actually dengue cases.

"It takes them two weeks to analyse each case," he said.

In declaring the epidemic over in Penang, Dr Fonseka said no cases had been reported to government hospitals in the last 10 days.

"We are only getting reports of one or two cases a day made by private clinics and hospitals as compared to more than 10 daily at the peak of the epidemic in August," he added.

"As far as Penang is concerned, the epidemic is over. However, the public should not relax their vigilance."

CSO: 5400/8407

MEXICO

OAXACA TYPHOID FEVER CASES

Tuxtla Gutierrez LA VOZ DEL SUDESTE in Spanish 10 Sep 82 p 14

[Text] Pinotepa Nacional, Oaxaca--Up until the present time, none of the health sector departments, the Secretariat of Health and Assistance [SSA], the Mexican Social Security Institute [IMSS] and the Institute of Social Security and Services for Government Workers [ISSSTE], have intervened in an attempt to eradicate the dreaded typhoid fever in the coastal area of Oaxaca, where two deaths attributable to that disease have already been recorded.

This was reported by Benjamin Ruiz Solis, the social representative from the city trade union. He indicated that two deaths have been recorded in this city alone, a fact that suggests that the coastal population is being decimated by the terrible disease.

These events have given the people cause for fear regarding the disease because health authorities have remained indifferent to the problem. Therefore the intervention of the governor of the state is urgently needed to direct a campaign to be carried out by the coordinated efforts of the public health services.

Ruiz Solis added that the typhoid fever is taking its greatest toll among the lower classes which represent 40 percent of the total population in this city alone without considering the rest of the Oaxacan coast. Most of the population is poverty-stricken which aggravates the problem, since most of the people have only enough for a few mouthfuls of food and cannot afford health care and medicine.

9787  
CSO: 5400/2002

MEXICO

BRIEFS

HUASTEC A ZONE DENGUE CASES--San Luis Potosi--More than 500 cases of dengue fever were discovered in the Huasteca zone by coordinated state public health services according to the head of preventive medicine for that agency, Saturnino Gomez. He added that a campaign would be waged to avoid an epidemic. The number of cases has increased during the past months, and as a result, officials of 40 general hospitals in the area have been advised of the outbreak in order to intensify sanitary measures. [Text] [Mexico City UNOMASUNO in Spanish 22 Sep 82 p 6] 9787

ANTIRABIES VACCINE SHORTAGE--Angostura, Sinaloa--Fourteen people who were bitten yesterday by a rabid dog are in danger of dying due to a shortage of antirabies vaccine. "There is not a single dose of the medicine available," said Roberto Garcia Arciga, director of the local health center. He added that all 14 people including men, women and children, were bitten by a stray dog that proved to have rabies. "The situation is desperate for these people," he said, "because none of the clinics of the Secretariat of Health and Assistance [SSA], the Mexican Social Security Institute [IMSS], the Institute of Social Security and Services for Government Workers [ISSSTE] or pharmacies have been able to obtain antirabies vaccine. He indicated that the people who were attacked by the dog will remain at the local social security clinic until the vaccine can be obtained from cooperating agencies. [Text] [Mexico City EXCELSIOR in Spanish 21 Sep 82 p 8-D] 9787

CSO: 5400/2002

MOZAMBIQUE

BRIEFS

TETANUS INCIDENCE DECLINE--RM-Jornal in Maputo recently reported that the tetanus decline in Maputo in the last 3 years is the result of the country's current vaccination program. "Although we do not have reliable statistics on cases of tetanus in the rest of the country," said a Ministry of Health technician, "the situation in Maputo is reassuring for us." Reconfirming this conclusion, Dr Julie Cliff disclosed that in the first months of this year, only four cases of tetanus in the newborn had been recorded at the Central Hospital of Maputo [HCM]. She also said that there was a considerable difference between cases in the last 2 years if we take into consideration the 101 recorded in 1980 and only 40 last year. Julie Cliff further mentioned that it is still not possible to confirm statistics on the incidence of tetanus throughout the country, although the cases recorded last year exceeded 340. In fact, to verify the incidence of both tetanus and other diseases among the people, health organizations expect to undertake scientific studies in several parts of the country. [Beira DIARIO DE MOCAMBIQUE in Portuguese 24 Sep 82 p 2] 8870

MEASLES EPIDEMIC CONTINUES--An epidemiologist from the National Department of Preventive Medicine in Maputo recently stated that a measles epidemic causing death among children is still prevalent in the country. Speaking to Mozambique Radio, he indicated that since the first 6 months of this year, they had been apprised of around 7,000 cases of measles. He presumed, however, that since the communication system was not efficient, it is possible that many other unreported cases of measles have been recorded. Regarding last year, the epidemiologist said that health units have reported more than 16,000 cases. [Text] Beira DIARIO DE MOCAMBIQUE in Portuguese 15 Sep 82 p 16] 8870

CHOLERA OUTBREAK UNDER CONTROL--The outbreak of cholera that had been affecting the province of Gaza since the beginning of the year is now completely under control. Teams of the provincial health directorate of Gaza visited the various districts and communal villages that had been affected by this epidemic and carried out preventive operations aimed at combating the disease. According to a technician from the department of preventive medicine, a number of preventive measures had been adopted right after the outbreak of the epidemic in this region of the country. [Text] [Beira DIARIO DE MOCAMBIQUE in Portuguese 6 Nov 82 p 3]

## SIXTY-FIVE ENCEPHALITIS DEATHS REPORTED

Kathmandu THE RISING NEPAL in English 31 Oct 82 p 1

[Text]

Dhangadhi, (RSS):

Encephalitis claimed sixty-five lives since its outbreak in this part of the country about a month back.

According to the district public health office, altogether 310 persons had contracted the dreaded disease as of October 10. Thirty-three of the patients are still under-going treatment while the rest have recovered from the disease.

The health workers of Kailali Hospital, Malabara health centre and Manuwa, Dododhara, Tikapur and Urma health posts are involved in controlling the disease.

More than half the death toll (38) were recorded in Malabara area where the disease was widespread. In this area twenty-four people recovered from the disease while three still are undergoing treatment.

According to the public health office, six of the thirty encephalitis patients

to the hospital by Munuwa health post also died while three others are undergoing treatment. The rest have recovered from the disease.

One of the seven encephalitis patients admitted to Dododhara health post died while the rest recovered. At Tikapur, all nine encephalitis patients admitted to the local health post have recovered.

At Urma village panchayat, five encephalitis patients died, five recovered and three are still undergoing treatment.

Of the 184 encephalitis patients admitted to Kailali Hospital, 15 died, 22 are undergoing treatment and the rest have recovered.

Meanwhile it is learnt that the disease has also spread to Kanchanpur district of Mahakali zone.

Fifteen encephalitis patients have been brought to Kailali hospital from there.

CSO: 5400/4328

## SCIENTISTS HOPE FOR ERADICATION OF TSETSE FLY

London WEST AFRICA In English No 3405, 8 Nov 82 p 2889

[Article by Gamini Seneviratne: "Nigeria Goes Nuclear Against an Old Enemy"]

[Text] NIGERIA will soon launch an open nuclear attack against an old enemy — *Glossina*, the bloodsucking tsetse fly. No explosive devices are involved. This is strictly a matter of peaceful use of nuclear techniques.

The assault, scheduled to start early January, initially in a 1,500 square kilometre area, may have to be sustained in this target zone for up to two years. It is directed principally at *Glossina palpalis palpalis*, one of 22 species of the tsetse which is peculiar to a broad sweep across the middle of Africa.

The infamy of the tsetse fly rivals that of the vampire bat; and with much better reason. Not only does it feed almost exclusively on blood, but it is the carrier of microscopic single-cell parasites, of the genus *trypanosoma*, some of which cause the dreaded Sleeping Sickness in humans and Nagana in livestock.

The diseases, known collectively as *trypanosomiasis*, often kill; and always causes acute lethargy, loss of appetite and depressed mobility and productivity. In its range between 15°N and 21°S, it effectively inhibits healthy vertebrate life in some 10 million square kilometres of equatorial Africa.

Some 70 per cent of this land is classified as potentially agricultural. One estimate is that the region's cattle population could be increased by 100 million head, if the area was freed of flies. Not surprisingly, several administrations going back into colonial times and since independence, have fought the fly in the name of development.

Success has been limited, to say the least. The methods employed — principally extensive forest clearing, to set off

barriers between tsetse habitats and farm land, slaughter of wildlife which are host to the parasite and massive use of insecticides — have been expensive, wasteful and at best only temporarily effective.

More recently, several more sophisticated scientific systems have suggested themselves. Of them, the Sterile Insect Technique (SIT) developed in the Vienna-based International Atomic Energy Agency's laboratory in Seibersdorf is probably the most practicable.

The technique — essentially one of swamping the wild pest species with considerably larger numbers of its own kind who have been laboratory-reared and sexually neutered by exposure to nuclear radiation — has been used with significant success against the Mediterranean Fruit Fly in Mexico. Its effectiveness against the tsetse has also been demonstrated in trials in Tanzania and Upper Volta.

The programme in Nigeria is a long way from the purely experimental. The spade work has been done. The fact finding, started in 1979 and centred mainly along the Akuni and Feferua rivers, will be wrapped up before the end of November.

The preliminary studies were on two broad areas — the general ecology of the fly, its mobility, feeding, seasonal fluctuations etc; and the technical one of mass rearing methods to produce large numbers of tsetse larvae in Nigeria's specific conditions.

Questions on the lab-reared, sterilised flies — such as how far they will fly, how long they will live and will they mate with the wild population — have now been resolved. The short answer is that the sterilised insect is not very different from

the sexually normal one.

Other problems, such as how best to reduce wild populations before releasing the sterilised ones (an essential part of the technique) are being worked out on the basis of the data gathered. The choices range from insecticides to traps.

There are choices within the choices. Should the insecticides be persistent or non-persistent? Should the stuff be sprayed or layed? Should spraying be done by helicopter or fixed-wing aircraft or land-based vehicle? Should they use screens or biconical or other types of traps?

A crucial question is how to minimise the risk of the solution actually increasing the problem. The possibility is inherent in any SIT programme. The technique after all is to let loose, among the wild 'target' population, a considerably greater number of sterilised insects of the same species.

Where possible (as it is with the tsetse) only males are released. They mate with the wild females who, of course, are then unable to bear young. Some generations (and releases) later, the birthrate is reduced to a point where there are no fertile males around; and the population is wiped out.

The attraction of the technique is that eradication can be achieved (an end to which few other techniques pretend) and that it will be done without harming other species or the environment in general. Nevertheless, the pest species will, for a time, be vastly enhanced in numbers.

Statistically this is usually less serious because SIT does involve preliminary 'thinning' of the target population, by use of traps, insecticides or whatever. But, given that the problem with the tsetse is one of disease, rather than damage, the issue is that much more delicate.

The option most likely to be taken up, before the January start of the operation in Nigeria, seems to be to release adults rather than pupae. This is based on the known fact that the first blood meal in the wild is the most likely to make infection-

carriers of the sterilised flies. Newly hatched pupae will need to feed, whereas adults could be given a belly full of disinfected blood just before take-off.

Meanwhile the groundwork is almost complete. The project, headquartered in Vom, in Nigeria's Plateau State, is moving steadily towards its target of a standing colony of 100,000 breeding females by January. Such a number would ensure 10,000 surplus males each week. The laboratory has a capacity of 200,000 fertile females.

Though the target species is *palpalis*, the continuing field studies includes several others. At least one other, *Glossina tachinoides*, is already in the controllers' sights. The immediate target area is 1,500 square kilometres of riverine grassland, which in turn is part of a 10,000 sq. km. area earmarked for a major integrated development programme.

This development, the Lafia Agricultural Development Project (in which the World Bank is participating) includes human settlements, farming and animal husbandry. It is a fertile area in which such development has been inhibited, mainly by the tsetse. Some sort of major offensive against the fly is an inherent part of the plan.

By moving in early, on a meaningfully large section of the area, the SIT project will have the added, arguably, the most important task of working out the economics of this method of control against the available alternatives.

Set in the south-east corner of the development area, the project is designed to be able to fan out further. There is no recognisable doubt in the project organisers' minds but that SIT is the answer to the tsetse problem.

If they are right, then there is a considerable chunk of 10 million square miles of Africa, at which national planners would be looking again.

NIGERIA

BRIEFS

CHOLERA IMMUNIZATIONS--About 27,160 persons have been immunized against cholera and measles in the old Awgu Local Government area between January and October this year. In a statement in his office, the Senior Health Superintendent for the area, Mr L.O. Ozobu said that 23,354 premises were also inspected to ensure health and environmental sanitation. He decried the unbecoming refuse accumulation in the area and implored the State Health Management Board Headquarters to provide them with tipper lorry and refuse gang in order to avert the health hazards posed by the indiscriminate refuse accumulation. The superintendent revealed that his department, in spite of lack of drugs and equipment, was able to carry out pests by spraying kerosene and malaria oil on the streams to prevent infection. He said that public places and various premises were also fumigated.  
[Text] [Kaduna NEW NIGERIAN in English 8 Nov 82 p 17]

CSO: 5400/67

## WIDESPREAD ADULTERATION OF DRUGS DISCUSSED

Karachi DAWN in English 28 Oct 82 p 1

[Article by Zubaydah Arif]

[Text] HORROR stories abound. Someone at some time or another seems to have had an encounter with a spurious or substandard drug. The capsule that was full of atta, the sugar-coated pill that was sugar through and through, the syrup that tasted pleasant and that was about all, the gripe water that had bits of mosquitoes floating in it: shamefully such tales are legion.

The situation is ironic when one realises that the growth of the pharmaceutical industry has been phenomenal all over the world in recent decades. Modern technology makes effective research and accurate testing possible. Hence more and more efficacious drugs, making maximum use of international research, are being introduced in the market to combat human disease.

'An ordinary man earning an ordinary salary really cannot afford to be ill,' commented a doctor with a general practice, catering to the lower middle class. It is, therefore, up to his doctor to realise this and to ensure that he is cured of whatever ailment he may have in the least possible time, (somehow the mention of money seems rather irrelevant here) and to prescribe medicine that will do this.

### Imitate

Yet the drugs that the patient then buys, from a budget that is probably overstrained, may turn out to be completely ineffective and could also prove detrimental to an already deteriorating state of health.'

There can be no doubt that spurious or fake drugs can wreak havoc on precious lives. These are the medicines which closely copy the original and are passed off as genuine. This practice is nothing short of a criminal: the entire packing of reputable drugs are imitated, to wilfully dupe and to deceive an innocent buyer.

On analysis it is found that the product may just resemble the appearance of the drug, and the ingredients can actually be anything from 'chalk to starch'. It is rather obvious that the traders in this 'business' care for nothing but their profit. It is frightening to think of these men, who are robbing a vulnerable segment of the population, caring nothing that their coldblooded and calculating practices may cause death and possible destruction.

Mr Syed Abbas, Secretary of the Pakistan Pharmaceutical Manufacturer's Association, feels very strongly about the production of spurious drugs.

"There is a new class of drug peddlars which is unabashedly playing the nefarious game in a subtle way. They imitate the style and the presentation of a popular product of

some well-known company to the last detail, even to the shape of the monogram. Only the original name is substituted. This is done with such finesse that it is difficult to distinguish between the genuine and the spurious."

For instance, a company imports a particular brand of tablet, packs them in strips of ten tablets and each strip is retailed at Rs 4.50. Immediately, some unscrupulous companies also start making the same drug, and pack them in strips very closely resembling that of the imported one. The drug is then sold for Re 1 a strip in the market with a different brand name.

The production of substandard drugs appears to be rather prevalent these days. A pharmacist told me, "These medicines, on analysis, are found to contain the declared ingredients, but not according to the label declaration."

Another kind of substandard drugs are those that become so after a lapse of time, or because of storage inadequacies, e.g. a spot in strong sunlight. International drug companies are aware that drugs are perishable and should be treated as such. Instructions as to the storage, and the expiry date are printed clearly on the package, meant to be followed faithfully, both by the stockist and the user."

Unfortunately, not everyone is aware of the significance of any expiry date or what exactly a label

declaration means. Thus unscrupulous chemists unload these 'lapsed' medicines on the unwary.

In fact, as a small-time druggist informed me, 'expired' drugs are a means of business for some. "You know that most Western countries produce medicines with an expiry date clearly printed on the bottle and the packing. Every year pharmaceutical companies are left with literally thousands of 'expired' medicines.

"So they get in touch with importers/dealers in Pakistan and ask them if they wish to buy them. The answer they get? 'What sort of a rebate will you be giving?' There you are — drugs that should have been rightfully destroyed find their way to our markets, with their expiry dates cleverly blacked out, and are sold to the public with hesitation."

Obviously quality control in pharmaceutical laboratories is extremely essential. The efficacy of any medicine is due to one or more active constituents contained in it and it is critical for curing disease that these are present in the exact amount and potency. If the delicate balance is disturbed, either deliberately or carelessly, the therapeutic properties of the drug are destroyed or weakened, and the disease will progress unchecked, perhaps to a tragic end.

At present, the total membership of the P.P.M.A. stands at 58, whereas the Government has granted manufacturing licences to 169 industrial units. This discrepancy was explained by Mr Abbas.

"P.P.M.A. is very particular about the quality of the drugs manufactured by the various pharmaceutical companies. The Association has, therefore, devised a system of inspection before accepting an organisation as its member. The inspection team includes experts who have technical qualifications and considerable experience in the industry.

"The inspection team examines the premises thoroughly, paying particular attention to the quality control laboratory facilities. The availability of laboratory equipment is a pre-requisite, as is the proper qualifications and knowledge of all the individuals employed for control work. Apart from the 58 who are our members, the other companies do not meet our requirements for membership.

"The Government also possesses a fully-equipped drug control organisation. Yet, despite their inspection, the manufacture of sub-standard and spurious drugs continues unchecked."

When asked about ways to eradicate unethical practices, Mr Abbas had a couple of suggestions to make:

"The colour of the product or the packaging or even the pattern of the packaging of reputable organisations could be patented, or sold under a registered trademark, otherwise anyone can market the product. In the case of single-ingredient medicines, the name could be made the exclusive property of the company."

In the pharmaceutical industry, the snag, as far as the lay public is concerned, is that the consumer is not the real consumer. The doctor is the actual decision maker. As a matter of fact, he too can play a positive role in combating this serious menace to public health by impressing upon his patients, especially the illiterate ones, the importance of buying only quality drugs, or else supplying them to the patient himself. Yet, somehow I got the impression that medicines supplied in bulk to some doctors and hospitals had one desirable quality: they were inexpensive. Nobody mentioned anything about quality or standard.

Again and again one remark kept popping up is that apart from the members of the medical profession, chemists could also be actively involved in and responsible for promoting or discouraging sub-standard drugs. A charge usually made against them is that they encourage the sale of unethical drugs as they receive more commission from the manufacturers.

But several chemists and druggists in the city of Karachi vehemently denied the accusation.

Mr Hameed Kothari, the owner of a large drugstore, was more straightforward.

### Colour

In his opinion "the margin of profit for a chemist is very high in sub-standard drugs (about 25-30 p.c) as compared to standard drugs (about 10 p.c). If a doctor can take an oath to serve the suffering humanity and then turn around and fleece them even to the extent of giving

them or prescribing unethical drugs, it is hardly surprising that the chemist plays along. Especially considering that the margin of profit for a chemist in Pakistan is the least in the world, and the tendency to make money is at fever-pitch."

He observed that one could expect to encounter spurious or sub-standard drugs in 'illiterate areas,' in small villages and towns where the public tended to identify a medicine by its colour and shape ('Woh pili wali goli dey dijaey'), rather than the name of the drug, never mind the company that made it.

"Expensive drugs those costing Rs 50 or more are counterfeited. The most common are anti-tuberculosis drugs, antibiotics like erythromycin (there's an exact copy of a well-known pharmaceutical make on the market these days.)"

When I mentioned to him that since drugs and medicines are not purchased as other commodities, perhaps in the public interest it should be made mandatory upon all chemists that they may not dispense other than O.T.C. (over the counter) drugs, such as aspirin, vitamins, etc.

Everything else should only be sold on a medical practitioner's prescription. Mr Kothari countered with 'I doubt if it will make any difference anyway. Such legislation would need enforcement, and I don't see that happening. Rather it will give rise to more corruption. People wishing to buy a specific drug would get hold of a prescription by bribery or some other underhand method.'

A neighbourhood chemist, (a knowledgeable gentleman tucked away in the suburbs of North Nazimabad) more or less repeated what Mr Abbas has said earlier.

"The problem of substandard and spurious drugs should be solved at the root — by weeding out the manufacturers of these dangerous products. Since the Government was responsible for granting licences, it should ensure that the organisation possesses sufficient technical know-how plus proper laboratory facilities, before it is permitted to go into production and affect the health and well-being of the public."

Most chemists and pharmaceutical manufacturers are concerned

about the present state of affairs and they agree that the major share of the responsibility for the manufacture of unethical drugs is that of the Government drug inspectors.

"If they were to discharge their duties honestly and diligently, the manufacture and sale of these

harmful drugs would disappear in no time," observed Mr Abbas.

There are, however, occasions when one is heartened by chemists who take their responsibility seriously. A friend recounted:

"My mother takes Valium which is prescribed by our general practitioner. The other evening, I

was busy in the house, so my mother wrote the words VALIUM-5 mg on a slip of paper and gave it to my 10-year-old daughter to fetch it from the chemist a block away. My daughter returned empty-handed — the chemist had said:

'Will you please ask your Mummy to come and get this?'

CSO: 5400/4324

PAKISTAN

BRIEFS

DEATHS DUE TO TUBERCULOSIS--Christian, Oct 30: About one lakh persons die of tuberculosis every year in the country owing to the absence of proper medical facilities, healthy environment and nutritious diet. This was stated by Mufti Ziaul Hasan, President, Punjab T.B. Association. Addressing a gathering here, he said the developed countries had almost eradicated tuberculosis but in this subcontinent the disease was on the increase owing to poverty, hunger and illiteracy, and every year the death toll from this disease was increasing. He said Rs. 20 lakh was being spent during the current year by his association on 56 dispensaries, while only Rs. 3 lakh had been provided to the association from Zakat funds. He said a model T.B. clinic would be established at a suitable place in the province where young men would be trained under the supervision of foreign experts. He urged the Government to train Khatibs also in T.B. control so that they could educate people during their speeches in mosques. [Text] [Karachi DAWN in English 31 Oct 82 p 4]

CSO: 5400/4324

PHILIPPINES

FATAL MEASLES OUTBREAK REPORTED

Manila BULLETIN TODAY in English 6 Nov 82 pp 1, 11

[Article by Owen Masaganda]

[Text] Lucena City, Nov 5--An outbreak of measles in the island town of Burdeos, Quezon, has claimed the lives of at least 14 children, aged one to four years old.

Capt Eduardo Ador Dionisio, 231st Constabulary commander, was sent by Col Recaredo A. Sarmiento II, Quezon PC chief of barangay Cutuctan, Burdeos, following a report of the outbreaks by barangay captain Alfredo Seminiano.

Seminiano said the fatalities included two children of Gonzalo Caballero and others identified only by the family names Feria, Rios, Vencio, Reason, and Virginia.

The young Feria, Seminiano said, died before reaching the hospital in Mauban, Quezon.

The other two measles victims, Alfredo Seminiano, Jr., 2, and Charlie Dupo, are now recuperating at the Mt. Carmel and Quezon Memorial hospitals here.

Brig. Gen. Andres B. Ramos, PC regional chief, sent a military medical team to the island to administer vaccination against measles and malaria.

Captain Dionisio said some 20 boxes of medicine were distributed.

Meanwhile, a child afflicted with malaria died in Jomalig, Quezon, it was reported.

CSO: 5400/4329

SPREAD OF FILARIA REPORTED

Colombo THE ISLAND in English 27 Oct 82 p 3

[Text]

A mammoth petition is being signed by the residents of Bopitiya, Pamunugama and Uswetikeiyawa, requesting the Superintendents of Anti-Filariasis Campaign to open a unit at Pamunugama in order to check the spreading of Filaria due to the speedy breeding of mosquitoes in the area.

Mr. Athula Bopearachchi of Bopitiya in the Christian Workers Movement who made a statement said that it was a matter for great regret to note that the officers concerned had ignored the area.

Pamunugama had been declared a Filaria affected area by the Anti-Filariasis Campaign.

He had a doubt whether the campaign treated them in that manner as a well behaved set of people lived in these areas.

This petition further states that the disinfectant was being sprayed twice a day within the town limits of Ja-Ela and Kandana, but they overlook Pamunugama, Bopitiya and Uswetikeiyawa.

It further requests Mr. John A. E. Amarathunge MP for Wattala to interfere in this matter and request the Superintendent of Anti-Filariasis Campaign to open up a Unit at Pamunugama and start fighting the spread of this disease.

CSO: 5400/4330

SRI LANKA

BRIEFS

CHOLERA DEATHS REPORTED--Two persons from Mullipothana have died of Cholera. Fifteen others are admitted with cholera infection at the Trincomalee base hospital. A new separate ward has been set up to treat patients suffering from Cholera. Health department officials have been rushed to the village of Mullipathana in Seruwila electorate to implement preventive measures. Hotels have been requested to close for some time. Chlorination of wells have commenced. It is revealed that due to drought the wells in the village had gone dry and people collected drinking water from a drainage channel from which the cholera infection has spread. [Colombo THE ISLAND in English 28 Oct 82 p 2]

CSO: 5400/4330

TANZANIA

ZANZIBAR BRINGS DYSENTERY EPIDEMIC UNDER CONTROL

Dar es Salaam DAILY NEWS in English 19 Oct 82 p 3

[Excerpt] ZANZIBAR has brought under control the dysentery epidemic which broke out last February affecting 4, 160 people and killing at least 100 of them.

The Director of Preventive Services in the Isles Ministry of Health and Social Welfare, Dr. Uledi Mwita, told Shihata yesterday that the number of patients admitted at hospitals had by last month declined markedly.

He said there was no patient admitted at the V.I. Lenin Hospital since September 11 when the last patient was discharged. Pemba hospitals were not admitting any patients either by the middle of September, he said.

Dr. Mwita said according to statistics compiled by his department, Zanzibar Island registered a total of 2,368 patients out of whom 76 died between February and September this year, while Pemba hospital admitted 1,792 patients and 24 among them lost their lives.

He said a total of 1,295 people were, between February and April this year, admitted at the Isles hospitals during which 35 deaths were registered. In May and June, figures were 1,313 patients and 32 deaths.

In July, however, the figures rose to an alarming 981 patients and 37 deaths. But August saw an encouraging decline from 981 to 571 patients and from 37 to only four deaths.

Last month, the figures were two deaths out of 118 patients.

The Director warned, however that dysentery cannot be wiped out completely because the disease is endemic in tropical countries.

Meanwhile, the Isles Ministry of Health and Social Welfare has lifted a ban on road-side food stores in both Zanzibar and Pemba, which was imposed following the outbreak of the disease.

In a televised announcement recently, a Ministry spokesman warned, however, that food store proprietors should reopen their business only after they secured written permits from Health authorities to verify that their premises had been inspected for cleanliness.

Meanwhile, a number of people in Songea Rural District are suffering from dysentery and vomiting, an official of the Ministry of Health said in Dar es Salaam at the weekend.

The official told Radio Tanzania that the disease, the outbreak of which was first reported in Tunduru District in April this year, had already killed a total of 82 people in the two districts.

Sixty of the deceased are from Tunduru and 22 from Songea Rural District, he told Radio Tanzania in an interview.

CSO: 5400/42

HEALTH EDUCATION TEAM TO HELP COMBAT DYSENTERY IN TUNDURU

Dar es Salaam DAILY NEWS in English 16 Oct 82 p 3

[Text]

A team of health education officers and staff from Epidemiology Department at the Ministry of Health will soon be dispatched to Tunduru, Ruvuma region to help combat dysentery and vomiting which brokeout in the district last April.

The Principal Public Health Officer in the Ministry, Ndugu Joseph Malika said in Dar es Salaam yesterday that the team would mount a campaign to educate people on the importance of boiling drinking water and observe sanitary regulations.

The staff from the Epidemiology division would concentrate on treating people attacked by the diseases, Ndugu Malika said.

He said that more medicine would be sent to the district soon while the ministry is working on more measures against the diseases.

Tunduru district had been quarantined since last July following the outbreak of the diseases.

Ndugu Malika said that a

medical team from Dar es Salaam had visited the district early September and found that quarantine regulations were being violated.

He said that the team then advised regional authorities to take strict measures to enforce quarantine regulations and take necessary precautionary measures.

"By the time we left the region, the number of medical staff had been raised from 10 to 20 and two other stations had been established in the border areas," Ndugu Malika said.

He pointed out however that communications problem had been the most disturbing question. Ruvuma regional authorities had learnt of the disease outbreak in July while it actually broke out in April.

The ministry has also asked regional authorities to give priority to vehicles serving the team when distributing fuel.

A *Shihata* dispatch from Ruvuma early this week, reported that 80 people had died and another 2,982 hospitalised since the disease broke out.

CSO: 5400/42

BRIEFS

LEPROSY PREVENTION CAMPAIGN--DODOMA--District co-ordinators of leprosy and tuberculosis control on the Mainland began a one month seminar in Dodoma yesterday to prepare a vigorous national campaign to fight the contagious diseases. Opening the seminar, the Dodoma Urban District Director, Ndugu Novatus Rutagaruka asked the participants to educate the public by using illustrations so that they may believe in the treatment they receive. Topics to be discussed at the seminar include the necessity to keep statistics of the sick, health education and how to run whooping cough clinics. Participants are from Arusha, Dodoma, Iringa, Kigoma, Kilimanjaro, Lindi, Mara, Mbeya, Morogoro, Mt-wara Rukwa, Singida, Tabora, Tanga, Kagera, Mwanza and Coast regions. [Text] [Dar es Salaam DAILY NEWS in English 9 Nov 82 p 3]

MATEKWE VILLAGE SCHISTOSOMIASIS CONTROL--MATEKWE Village in Nachingwea District has been selected as a pilot area in Lindi Region for chemical spraying to destroy bilharzia carriers in seven particular ponds as a measure to curb the spread of the disease. The Regional Medical Officer, Dr. Samwel Mgeni, has said due to an increase in the disease at the village, the Ministry of Health and the Arusha-based Tropical Pest Research Institute (TPRI), will treat the seven ponds which were dug ten years ago. Dr. Mgeni said the programme, which would later be extended to other villages, was aimed at destroying snails and their eggs. TPRI would at the same time carry out studies to determine the effectiveness of the chemicals and undertake an analysis to establish whether the treated water was suitable for drinking and cooking purposes, Dr. Mgeni said. Dr. Mgeni further said besides Nachingwea, bilharzia had spread to other areas in the region because people were using water drawn from untreated ponds and wells in the absence of streams and rivers. It is estimated that about 20 per cent of the people in Lindi Region suffer from the disease every year. [Text] [Dar es Salaam DAILY NEWS in English 9 Nov 82 p 3]

ANTI-CHOLERA, DYSENTERY CAMPAIGNS--THE Ministry of Health is presently working hand in hand with the regional health officials to combat cholera and dysentery outbreak. The Principal Public Health Officer Ndugu J.S. Malika said in Dar es Salaam yesterday that dysentry which claimed 80 lives and affected 2,982 people had been contained although it kept on reappearing the country over. He said until yesterday Dodoma region had 14 cholera patients at Isanga prison, Karema village in Rukwa region had 16, Hanang district had 8 and Kondoa district had 3. The disease has also reoccurred at the Makutopora National Service camp where 9 people have been hospitalised, while Lushoto district in Tanga has 5 such cases. [Text] [Dar es Salaam DAILY NEWS in English 28 Oct 82 p 3]

TURKEY

BRAIN DAMAGE FROM INOCULATIONS SPARKS REACTION

Istanbul CUMHURIYET in Turkish 8 Oct 82 p 8

Article by Senay Kalkam: "Experts: Measles and Whooping Cough Inoculations do not Cause Brain Damage"

Text Professor Dr Ozdemir Ilter, head of the Childhood Health and Diseases department of the Cerrahpasa Medical Faculty, whose opinions we sought concerning the claims appearing in the press to the effect that measles and pertussis (whooping cough) inoculations have caused brain damage and anxiety among the public, stated, "An extremely rare phenomenon is being unjustifiably exaggerated. It would not be correct to stop inoculations, because of brain damage which the disease may cause is more serious than the damage from the inoculation. Besides, it is very difficult to treat the disease."

Professor Dr Olcay Neyzi, head of the Childhood Health and Diseases department of the Istanbul University Medical Faculty, said, "There is no brain damage on a scale which should halt inoculations. Measles and whooping cough lead to more serious diseases and symptoms. To stop inoculating, which has provided society with immunity, on the grounds that one child in a million has become ill due to the inoculation, would be quite ill-advised."

Head of the Childhood Health and Diseases department of the Cerrahpasa Medical Faculty Professor Dr Ozdemir Ilter, stating that the most reliable and most economical weapon of preventive medicine is the inoculation termed "active immunization," said: "Five million children in the world are dying or are becoming crippled by diseases which could be prevented through immunization. Ten percent of the 80 million children born in the world each year can be inoculated. The wiping out of smallpox from the world was achieved through "inoculation" immunization. If there is no discomfort or illness in an inoculated person or host, there is no harm from the inoculation. The harm could come from a foreign substance which enters the body. Sometimes even foods ingested cause various discomforts. Immunization is the most trusted method in preventive medicine for sustaining health."

Ilter, stating that measles and whooping cough cause illnesses more serious than those which their inoculations may cause, said that there is a degree of damage in the brain of every child born, whether clinically detectable or not, due to the air pressure encountered once it has left the birth canal. Ozdemir

Ilter, stating that it was impossible to investigate whether or not there is damage to the brain of every child to be inoculated, from birth or afterwards, spoke thus: "In this matter the greatest responsibility rests with the mother. Before the inoculation, she must tell the doctor of any discomfort suffered previously by the child or any of its brothers or sisters. After the inoculation, the mother must inform the doctor of unusual discomfort brought about by the inoculation and especially if it persists for more than 48 hours."

Observing that in all of Turkey over a ten-year period five million children were inoculated against measles and whooping cough, Ilter noted that during this period only 642 children had come to the Cerrahpasa Medical Faculty with brain damage due to the inoculation and said, "In the event that inoculation-induced illnesses are diagnosed early, they can be treated. However, it is not possible to treat a child who is already suffering from measles or whooping cough who could be subject to brain damage (distressed movement, mental retardation, partial paralysis, etc.). For this reason every healthy child, who has not previously experienced any discomfort, must without fail be protected from these diseases by means of immunization--that is, inoculation. This most trusted method of preventive medicine absolutely must be utilized."

Ilter added that the Health Ministry would permit private physicians to administer the inoculations for a fee to avoid needless and unjustified panic among the people.

Professor Dr Olcay Neyzi, head of the Childhood Health and Diseases department of Istanbul University, discussing the side effects of all drugs used in the field of medicine, said: "There is no brain damage on a scale which should halt inoculations. Whooping cough and measles are the cause of greater discomfort than the inoculation. In my 25 years as a doctor, I have never seen a child with brain damage, paralyzed, or mentally retarded due to inoculation. This is essentially a one-in-a-million problem. To avoid inoculation, which has provided society with immunity, on the grounds that illness due to inoculation occurs in one child in a million is not at all advisable."

9962  
CSO: 5400/4702

VIETNAM

ELIMINATION OF TUBERCULOSIS BY YEAR 2000 ANTICIPATED

Hanoi QUAN DOI NHAN DAN in Vietnamese 4 Oct 82 p 3

[Article: "Establishing a Program To Eliminate Tuberculosis Throughout the Nation"]

[Text] (VNA) The Central Tuberculosis Institute has successfully set up an anti-TB program in line with the nation's situation. According to this program, all newborns in Vietnam will be immunized against tuberculosis with BCG vaccine. The institute uses the laboratory technique of examining tubercle bacilli on sputum as basic criteria for early detection of tuberculars. The institute has set up and applied to the entire country a scientific, short-term and free-of-charge treatment system for TB patients.

The provinces and cities have established 39 anti-TB centers. Each center has an anti-TB station and a sanatorium containing from 50 to 200 beds. Of over 650 districts nationwide, 348 have TB prevention and control organizations, while out of 8,500 villages and subwards 1,725 have cadres carrying out programs of preventing and controlling tuberculosis, and protecting the people's health.

At present, the Tuberculosis Institute is guiding the installations to vaccinate newborns with freeze-dried BCG. In the past 5 years alone, from 600,000 to 750,000 newborns have been immunized against tuberculosis per year. The newborn immunization rate against TB with BCG vaccine hovered from 80 to 90 percent in provinces and cities in the delta, and only from 30 to 40 percent in mountainous provinces and newly liberated areas. To ensure that all newborns are immunized, the Tuberculosis Institute has ordered midwives at health installations to vaccinate them in batches until completion. Properly to prevent and control TB among the people, the Central Tuberculosis Institute has paid attention to TB epidemiologic studies, relying on the pathophysiologic growth of the disease to develop anti-TB programs. The techniques of X-Ray, biological inquiries, sputum exams, and mortality rate analyses... have contributed to prompt detection and treatment. Since 1976, through a widespread TB prevention and control network, the institute has extended at-home TB treatment to a large number of patients. It has established 2 successful treatments projects, contributing to reducing TB incidence by 2.6 percent per year. As of now, according to an investigation conducted by the institute, the TB incidence rate detected by

direct sputum exams vacillates between 0.8 and 1.5 per 10,000 in the southern provinces and cities.

Implementing the WHO program of eliminating TB by the year 2,000, the Central Tuberculosis Institute, along with the TB prevention and control network nationwide, is striving to bring down the TB incidence rate in our country from 0.2 to 0.4 per 10,000 by the above date.

9213  
CSO: 5400/4327

ZAMBIA

RESEARCH PROJECT TO ERADICATE NATION'S SCHISTOSOMIASIS LAUNCHED

Lusaka DAILY MAIL in English 4 Nov 82 p 5

[Excerpt] A K52,000 research project to eradicate bilharzia in Zambia was launched yesterday by Ministry of Health Permanent Secretary, Dr Joseph Kasonde, in Lusaka.

The "Zambia field trials to control bilharzia" is being sponsored by ITT Zambia Limited. Speaking at Chainama Hills Golf Club where the launching took place, Dr Kasonde pledged that the Government would fully co-operate with ITT to ensure the successful completion of the project.

Dr Kasonde said his ministry had for some time been worried about the increasing cases of bilharzia in the country and that he welcomed this project which would test the viability of copper in the control of bilharzia.

He said the ministry considered primary health care as the most important task it had to perform for the society and it was very grateful to ITT for the efforts it was making in this field.

"In order for us to succeed in this field we have to research adequately and ITT is contributing a great deal to this work," Dr Kasonde said.

According to ITT public relations officer, Ms Ginny Andrews, the company's offices in Africa and the Middle East, in co-operation with ITT Zambia had agreed to fund full scale field trials near Lusaka to cost about K52,000.

The project will take up to three years and will be carried out with the co-operation of the Zambian health authorities and the Liverpool School of Tropical Medicine in the United Kingdom.

"The field trials are to test the viability of copper in controlled release glass [CRG] for the control of bilharzia," she said.

The research is being managed by an ITT scientist, Mr Cyril Drake, who is one of the discoverers of the CRG.

Mr Drake took the permanent secretary and his team of doctors and university professors to a portion at the golf club where he demonstrated how copper could be sprinkled in water to kill the snails that carry the bilharzia germ.

Mr Drake later explained that ITT did not claim that this experiment would, when finally completed, solve all the world problems concerning bilharzia disease.

"Maybe we will finish up using other applications. Maybe other methods will prove to be more effective than this one," he said.

However, he said, if the tests proved conclusively that CRG can control bilharzia, ITT was likely to offer the governments the know-how using simple concepts and local resources.

"Any country can make glass, and many third world countries, especially in Africa, already mine copper."

He pointed out that the cost of basic materials was minimal, and CRG pellets were cheaper than alternative methods although total costs depended on the size of the area to be covered.

CSO: 3400/289

CHOLERA, DIARRHOEA PREVENTION INCIDENCE, IN MUFULIRA, LUANGWA

Lusaka TIMES OF ZAMBIA in English 10 Nov 82 p 1

[Text]

CHOLERA has broken out in Mufulira, with four people being admitted to Ronald Ross Mine Hospital, Kamuchanga Hospital chief Dr Abdul Taludar confirmed.

Dr Taludar said the hospital had confirmed that two of four patients admitted had cholera and the other two were still undergoing tests.

The patients — two women, a girl and a man — were admitted on Sunday.

The four have been quarantined and no one is allowed to visit them.

Yesterday afternoon, 20 district medical experts including Mufulira Division of Zambia Consolidated Copper Mines (ZCCM) chief medical superintendent, Dr Chilufya Masange, and Dr Taludar held an emergency meeting at Malcolm Moffat Hospital to map out a strategy to tackle the killer disease.

The meeting resolved that Kamuchanga clinic be provided with emergency bedding facilities for new cholera cases.

It was also resolved that all health staff and workers in the cafeteria at Ronald Ross where patients are, be vaccinated against the disease.

From today the anti-cholera committee will launch public education on how to prevent the disease. Anti-cholera posters will be mounted in all public places.

And in a concerted effort to combat the disease, all health programmes scheduled to take place in Mufulira, including seminars, conferences, workshops and meetings have been cancelled until further notice.

It has not been established how the disease spread to Mufulira.

In Luangwa almost 30 people have been treated for serious cases of diarrhoea for the past six weeks, it was learnt in Lusaka yesterday.

Lusaka Province medical officer Dr Chitwa Chimbini said this after he returned from Luangwa where he led a team of medical officials last weekend to investigate reports of a suspected cholera outbreak.

Although the team established that there was no outbreak, Dr Chimbini recommended that the Ministry of Health should make cholera drugs at Medical Stores available.

The team, which toured Katondwe hospital and rural health centres at Kasinsa, Mwatigora, Luangwa Secondary School and Luangwa boma, discovered that cases of diarrhoea were rising.

Many people had been treated for the disease out of which 29 cases were "slightly serious to very serious". One child had died at Katondwe hospital.— Times Reporter/Zana.

CSO: 3400/289

CHOLERA INCIDENCE, CONTROL MEASURES NOTED

Lusaka TIMES OF ZAMBIA in English 11 Nov 82 p 5

[Excerpt]

A POWERFUL "disease surveillance committee" of medical experts and Party leaders has been formed in Mufulira to check the spread of cholera, committee secretary Mr Zebron Musonda said yesterday.

And a Zambia Consolidated Copper Mines spokesman has confirmed that two people — a girl and a boy — were admitted to Ronald Ross Hospital suffering from the killer disease.

No new cases had been reported to the hospital since Regina Namfukwe, 18, and her nephew Sydney Bwalya, six, were quarantined last Sunday.

Mr Musonda who is the district council's chief health inspector said his committee had intensified health educational campaign.

Sale of foodstuffs by the roadsides has been banned.

Yesterday mine police using public address system visited the mine townships urging people not to panic as "the situation was under control".

Sydney's father Mr Dawson Bwalya told the Times at

his Butondo mine township home that authorities had supplied his family with preventive drugs and the house which was quarantined at the weekend had been declared safe.

Mr Bwalya said Regina was taken ill on Saturday after visiting neighbours who had just returned from a fishing expedition at Lake Mweru in Luapula Province.

"At first we thought it was ordinary diarrhoea, but when Sydney also fell ill, we became concerned and rushed them to the hospital where they were admitted for observation".

Mr Bwalya who visited the victims yesterday said their condition had improved.

The ZCCM spokesman said the committee had set up Kamuchanga Hospital as surveillance centre where all new cases of cholera would be admitted.

"As a result of this decision no new cases of the disease had been handled by the mine hospital".

Kamuchanga Hospital medical officer in-charge Dr Abdul Taludar, who is a member of the committee said the institution had not admitted any cholera patients.

The other member of the committee is Mufulira division chief medical officer Dr Chilufya Masange.

CSO: 3400/289

BRIEFS

TB IN GWANDA--GWANDA--SIX people have died from tuberculosis at Gwanda District Hospital since the beginning of the year, the Gwanda district medical officer, Dr S. Mzezewa said yesterday. Dr Mzezewa said at least 300, new tuberculosis cases were being treated at the hospital every month and the figure was continuously rising. He attributed the prevalence of the disease in the area to ignorance which led many people to traditional healers instead of the hospital when the disease was still in its preliminary stages. The medical officer also said more than 50 people were being treated for sexually transmitted diseases every month at Gwanda. The Gwanda Rural Council has been given \$130 000 by the Ministry of Local Government and Town Planning for projects, the chairman of the council, Mr Peter Butchart, said yesterday. He said \$110 000 would be used for a new sewerage plant to meet the increase in the town's population of over 5 000. Another \$20 000 will be used to build classrooms and a new laboratory at Gwanda High School. [Text] [Harare THE HERALD in English 9 Nov 82 p 5]

BILHARZIA THREAT--AS many as 90 percent of schoolchildren in some parts of Zimbabwe's rural areas could be suffering from bilharzia, the Zimbabwe Nurses' Association has been told. Dr Paul Taylor, of the Blair Research Laboratory in Harare told the association's workshop in the city last week that the country's rural population suffered from various diseases because of ignorance and lack of facilities. There was lack of basic information about the diseases and health personnel had an important role to play as educators. He said it was difficult to diagnose bilharzia in the rural areas because of the lack of equipment. The incidence of malaria was not high because of the Government's spraying programme in areas prone to the disease. [Text] [Harare THE HERALD in English 8 Nov 82 p 7]

CSO: 5400/41

ANGOLA

BRIEFS

HUILA, MALANJE DISEASE--According to a bulletin on the country's zoosanitary situation in July, the Ministry of Agriculture revealed, Huila Province, with a total of five foci of bovine pneumonia and as many of symptomatic carbuncle, is still the most infected by animal disease. According to the same report, the foci were located in six Huila townships: Chicomba, Kaluquembe, Humpata, Gambos and Caonda, while three other foci of bovine contagious peripneumonia were discovered in Ganda, Benguela Province. Melanje Province has recorded two strentotricosis foci. The bulletin does not include data on Uige, Lunda-Sul, Kwanza-Norte and Kuando-Kubango provinces because their respective provincial delegations have not issued any report on the zoosanitary situation in these areas. It also adds that the Ministry of Agriculture sent a zoosanitary bulletin to the International Office of Epizootics (OIE), the Inter-African Office of Animal Resources, the Organization of African Unity (OAU) and the Directorate of Veterinary Services in Portugal, Mozambique, S. Tome and Principe, Zambia, Botswana and Zaire. [Text] [Luanda JORNAL DE ANGOLA in Portuguese 15 Oct 82 p 2] 8870

CSO: 5400/38

AUSTRALIA

BRIEFS

RYEGRASS THREAT TO CATTLE--FARMERS in the eastern States have been warned to watch for annual ryegrass toxicity in hay brought from South Australia. The ryegrass toxicity has caused serious stock losses in South Australia and Western Australia in recent years. With more dry feed being brought from the western States, the possibility of the disease reaching the eastern States has risen. A pasture specialist with the Victorian Department of Agriculture, Mr Joe Cade, said yesterday that hay infected with the bacterium could infect pastures where hay is fed out or stored. [Canberra THE AUSTRALIAN in English 4 Oct 82 p 2]

CSO: 5400/7513

CYPRUS

BRIEFS

ANTI-RAT CAMPAIGN LAUNCHED--Swarms of rats have been roaming Limassol town and district, attacking trees, food stores and fruit stalls, according to local press reports. A spokesman for the Limassol municipality's health office told the Cyprus Weekly yesterday, "We have so far exterminated 200,000. But there are many more. They are of the Norway type, grey coloured, with long tails. "They are nasty animals, made their appearance here some two years ago and since then they have multiplied by the thousand. But give us time, and we will oust them completely." A campaign to destroy the rats covered so far the western outskirts of the city, especially the coastal area from the Old Port to Zakaki. The municipal inspectors have been working in cooperation with the Departments of Health and Agriculture, following the instructions of West German expert Arno Hotte. The spokesman said: "We use a kind of food provided by the Agricultural Department, in plastic traps. When the rats devour a certain quantity equal to their weight, they die. "It's a simple and effective method and the results have been very good. We have so far actually found and buried some 200,000 dead rats. I'm sure there were others we didn't find." The campaign stopped for a month because of lack of personnel or funds. But this week the Municipal Commission gave the go ahead for an all-out campaign. The Municipal workers have now moved to the Ayios Ioannis quarter. It will take time to cover the whole of Limassol. A Limassolian said "They have to stop the rats from spreading to the seaside hotel area where they could do a lot of damage." [Text] [Nicosia CYPRUS WEEKLY in English 22-28 Oct 82 p 1]

DANGEROUS BEE DISEASE--Larnaca, 2 Nov--According to an announcement by the Larnaca-Famagusta beekeepers' association, a new disease affecting bees has made its appearance in Cyprus. It is called "Vorratis" and was probably brought to the island through importation of honeycombs from abroad. These were purchased by Cypriot plants in order to re-export Cypriot bees. The announcement mentions that the disease spreads rapidly, thus endangering many apiaries, unless beekeepers adopt the necessary preventive measures in time. The association draws the attention to beekeepers to the need for the systematic spraying of their bees. [Excerpt] [Nicosia KHARAVGI in Greek 3 Nov 82 p 3]

MEXICO

BRIEFS

CHIAPAS BRUCELLOSIS EPIDEMIC--Pijijiapan, Chiapas--In several areas of the city, countless cases of brucellosis have been discovered which endangers the livestock industry not only in the coastal region but also in other areas where the disease might spread. It is known that Secretariat of Agriculture and Water Resources [SARH] experts headed by the engineer Octavio Guillermo Michel, have been conducting inspections and giving agglutination serum blood tests to cattle which have confirmed the existence of the disease. It has been verified that the disease is contagious and that it affects the general reproductive organs through the digestive tract causing the expulsion of the fetus during the 5 to 8 months of the gestation period. It is therefore urgent that cattlemen be made aware of the problem and avoid using milk from sick animals in the processing of cheese and cream since it is the milk that carries the germs that later cause malt fever. [Text] [Tuxtla Gutierrez LA VOZ DEL SURESTE in Spanish 3 Sep 82 p 10] 9787

CSO: 5400/2002

MOZAMBIQUE

BRIEFS

NEWCASTLE DISEASE VACCINATION--Yesterday Maputo launched a poultry vaccination campaign. Included in the first stage of poultry from the domestic sector in the Matola, Machava, Boane and Jorge Dimitrov areas. The vaccination campaign's objective is to protect poultry from being infected by the contagious Newcastle disease. This disease mainly attacks chickens and turkeys of any age, although young chickens are most frequently infected. Newcastle disease develops rapidly and within a short time can destroy an entire flock. Sick animals, their carcasses and decaying products are the source of infection. There is no treatment for this disease. However, there is a vaccine which, if given in time to noninfected poultry, assures prevention against it. In past years, Animal Husbandry Services vaccinated against Newcastle throughout the province, both in the domestic and commercial sector. This has reduced incidence of the disease to isolated cases. Anyone having poultry should get in touch with local organizations to find out vaccination dates. Until receiving vaccination, poultry is to be kept in a pen. Vaccination is free and mandatory. [Text] [Maputo NOTICIAS in Portuguese 13 Oct 82 p 2] 8870

CSO: 5400/39

NIGERIA

BRIEFS

FATAL CATTLE DISEASE--ABOUT 250 cattles at Nok in the former Jema'a Federation are now suffering from a killer disease called Bovine Pluro Pneumonia (CBPP). A reliable source told the New Nigerian at Kafanchan that any cattle affected by the disease must surely die. The disease causes extreme loss of water and induces the discharge of watery substances in the eyes and the noses of affected cattles. The source further said the lungs of the cattle would become hardened and decolourised. The outbreak, of the disease was first detected in August, when reports were made to the Kaduna State Ministry of Animal and Forest Resources, the source said. The source however claimed that the ministry had not taken any steps to control the spread of the disease. The New Nigerian also learnt that in May this year, another cattle disease, Rinderpest was detected in Kachia and it claimed about 500 cattle. Meanwhile, the government has granted 75,000 Naira for the control of the diseases. [Text] [Kaduna NEW NIGERIAN in English 23 Oct 82 p 9]

CATTLE VACCINATED IN KADUNA--The Kaduna State Ministry of Animal Health and Livestock Services vaccinated 95,212 cattle against Rinderpest and Contagious Bovine Pleuropneumonia, (C.B.P.P.) in various parts of the state. Commissioner for Animal Health and Livestock Services, Alhaji Lawal Sani Zangon Daura, explained that vaccination campaign against various diseases had been going on for sometime now. He said the Government had provided 500,000 Naira for the control of "infectious diseases and internal and external parasites of the livestock." He confirmed 149 cattles suffering from Bovine at Dutse Nok, Kwoi district, were ordered to be killed and buried under the supervision of Veterinary staff from Kafanchan. He added that 13 had been killed by the diseases. Compensation will be paid to the affected owners, the commissioner said. [Text] [Kaduna NEW NIGERIAN in English 8 Nov 82 p 13]

CSO: 5400/67

TANZANIA

BRIEFS

ANTHRAX QUARANTINE IN GEITA--MUSALALA Division in Geita District has been quarantined following the outbreak of anthrax disease. A notice issued by the District Veterinary Officer, Dr. C.M. Nyamurunda, said the Musalala livestock market has been closed. [Excerpt] [Dar es Salaam SUNDAY NEWS in English 24 Oct 82 p 1]

MBARALI FOOT-AND-MOUTH QUARANTINE--Mbarali area in Mbeya Region has been placed under quarantine because of the foot and mouth disease, the Mbeya Regional Livestock Development Office has announced. Livestock will not be allowed to enter or leave the area. The announcement has also said that no hides and skins, bones or meat are going to leave the district without a special written permit from the Regional Veterinary Officer. [Text] [Dar es Salaam DAILY NEWS in English 1 Nov 82 p 3]

CSO: 5400/66

TAME BUFFALO SEEN AS ANSWER TO TSETSE FLY

Harare THE HERALD in English 16 Oct 82 p 5

[Text]

BUFFALO could play a valuable role as domestic animals in the development of the tsetse fly-ridden areas on Zimbabwe's northern borders, the provincial warden for communal lands in the Department of National Parks and Wildlife Management, Mr Mike Drury said in Harare yesterday.

Mr Drury said he hoped the first centre to capture and train buffalo for domestic use would be established in the Nyaminyami District in Kariba soon.

Several SADCC countries have already expressed interest in domesticating buffalo possibly with Zimbabwean help.

About 150 million domesticated water buffalo are used throughout the world either as draught animals or as major milk suppliers — and Mr Drury believes there is no reason why the Cape buffalo should not be domesticated as well.

In fact, extensive research carried out by Dr John Condy, of the Zimbabwe Ministry of Agriculture's Veterinary Services Department, has proved that these tsetse fly-resistant buffaloes can be domesticated, are stronger than other draught animals and are extremely affectionate towards their handlers.

"The problem is that people tend to regard the animal with awe and fear as one of the most dangerous of animals. This is a myth generated by hunters who always deal with buffalo when they are either under stress or wounded," said Mr Drury.

In reality, the buffalo is a docile creature that tends to shy away from humans in the wild and, perhaps more so than cattle, needs "a lot of genuine tender loving care" when domesticated.

If buffaloes are captured as yearlings or younger, they can be successfully trained and start working when they are between three and four years old. Bulls are too unpredictable to use, but steers and cows were no trouble, said Mr Drury.

One problem with buffaloes is that they are carriers of foot-and-mouth disease and still have to be culled when they endanger cattle-breeding.

But if buffalo are captured before they are four months old and isolated from the rest of the herd, they will be free of foot-and-mouth.

Apart from being used for ploughing, buffalo could also provide the marginal areas with meat. At the moment, getting milk from the Cape buffalo is difficult because it can withhold it completely unless it is calving.

However, similar problems were experienced at first with the water buffalo but extensive research led to a situation where, for example, they are being successfully machine-milked in Italy.

Mr Drury believes that research here could solve the problem and make the buffalo an important source of milk.

In all, Mr Drury believes that the buffalo, which thrives in marginal areas, would be far more valuable to their inhabitants than any exotic breeds of cattle not suited to the environment.

CSO: 5400/41

ZIMBABWE

BRIEFS

ANTI-RABIES DRIVE LAUNCHED--FOUR cases of rabies involving dogs and jackals have been reported in the last week in the Harare south commercial farming area, a spokesman for the Mashonaland provincial veterinary office, said yesterday. The senior animal health inspector for Harare, Mr Carel Meyer, said his office had now launched a rabies vaccination campaign. Teams were travelling to various district offices in Harare for the next eight days so that people would not have far to go to get their animals vaccinated. The service is free, but certificates of vaccination cost 60c. The teams will be working from 2 pm to 5 pm. Puppies should be vaccinated against rabies at three to four months old, then again at a year old and every three years afterwards. All dogs must be vaccinated but it is not compulsory for cats. Cases of rabid cats were very rare, said Mr Meyer. There were still occasional reports of rabid animals in the Norton area and in the farming area to the north of Harare towards Domboshawa. The following is a list of the dates the vaccination teams will be visiting district offices: Today at Borrowdale, tomorrow at Mount Pleasant; Friday at Marlborough; Monday at Mabelreign, October 26 at Waterfalls, October 27 at Hatfield and October 28 at Lochinvar. According to a spokesman for the Zimbabwe Veterinary Association, more than 5 000 dogs in Harare have been vaccinated against the deadly dog disease, parvovirus, since a warning of an outbreak was given less than two weeks ago. [Harare THE HERALD in English 20 Oct 82 p 1]

CATTLE KILLED BY ANTHRAX--SIX head of cattle died of anthrax on Chikuwatsime Farm, Macheke, last week, a police spokesman said in Harare yesterday. A spokesman for the Department of Veterinary Services in Harare said there had been extensive outbreaks of anthrax all over the country and particularly in the communal lands. The department had vaccinated over two million cattle in communal lands this year, he said, and also reminded commercial farmers to vaccinate their herds against the disease. [Text] [Harare THE HERALD in English 21 Oct 82 p 3]

CSO: 5400/41

MOKO DISEASE ERADICATION PROGRAM MAPPED FOR CARIBBEAN

European Grant

Bridgetown ADVOCATE-NEWS in English 22 Oct 82 p 7

[Text] CASTRIES, St. Lucia, Thursday, (CANA) —The Windward Islands Banana Association (WINBAN) has received a \$300 000 (EC\$1 equals 33 cents US) grant from the European Development Fund (EDF) to finance a project to eradicate the dreaded Moko disease in the four producing countries — Dominica, Grenada, St. Lucia and St. Vincent.

The WINBAN Communications Centre here said yesterday that WINBAN had entered into a contract with the Caribbean Community (CARICOM) Secretariat to provide the necessary expertise and services.

The secretariat would also conduct the field and laboratory work aimed at containing and eradicating the disease which threatens the banana industry of the Windward Islands, particularly Grenada.

Bananas are the key export crop of the four states.

The WINBAN-EDF- con-

tract was signed by Dr. Errol Reid, acting director of WINBAN research, Grenada's finance Minister, Bernard Coard on behalf of the CARICOM Secretariat and Mr. Gerald Watterson, delegate of the European Economic Commission in Trinidad.

WINBAN will be responsible for the project, which comprises a survey of incidence of the disease in the islands, development of containment programmes for identified and affected areas, assessment of and recommendations on public awareness and legal backup programmes on the identification and control of the disease.

In Grenada, where Moko disease has already been identified, the project staff will also assess present control measures and where necessary, recommend improvements.

They will also investigate banana and plantain varieties resistant to Moko and advise

on possible alternative crops for establishment in affected areas.

WINBAN said it was hoped that over an 18-month period, any incidence of the disease in Dominica, St. Lucia or St. Vincent will have been detected, contained and possibly eradicated.

It was also expected that in Grenada the disease will have been contained and improved eradication measures will have brought it under control. According to WINBAN, Moko is one of the oldest known diseases of bananas, having been first found in 1840 in Guyana. Since then, it has been discovered in Trinidad and in various Spanish-speaking countries in the region.

In 1978, Grenada became the first Windward Island to report the disease. WINBAN described Moko as a very serious disease of the banana family, one that was mainly responsible for the decline of the Trinidad and Tobago banana industry.

Contract Signing in Grenada

St Georges FREE WEST INDIAN in English 16 Oct 82 p 5

[Text] HELP has come to Grenada and other countries in the Windward Islands to eradicate the dreaded

moko disease, which affects one of Grenada's main export earners, banana..

A contract to implement a moko eradication programme was signed on Thursday by authorizing officer and Deputy Prime Minister, Bernard Coard; acting director of research of the Windward Islands' Banana Growers' Association (Winban), Dr. Errol Reid, and delegate of the Commission of the European Economic Community (EEC), Dr. Gerald Watterson.

The 18-month programme, financed by the EEC through its funding arm, the European Development Fund (EDF), to the tune of \$775,000 will be administered by the Caricom Secretariat and executed by Winban, based in St. Lucia.

It will identify the infected areas and implement measures to contain and eradicate the disease wherever it occurs. It will also assess and improve existing control measures and identify alternative crops to establish on the affected areas.

Grenada will benefit most from the programme because its industry is highly infested

with moko. The programme will attempt to eradicate Moko here, and to prevent its spread to the other Windward Islands, which also heavily depends on banana production.

Around 220 acres or 140,000 banana plants have had to be destroyed because of moko. Minister of Agriculture George Louison said at the signing, And within the past weeks, new areas have been identified where the disease has broken out.

EEC has already given Grenada assistance in health, education, production and other areas, including re-establishment of the Mirabeau Farm School, and with the Eastern Main Road, Min. Louison pointed out.

Working along with the Caricom Secretariat and Winban allows for further regional integration, he added.

Watterson said he would be happy if the programme could find economically viable methods of controlling and eradicating moko, within the industry's means and easily understood and implemented by farmers.

## BRIEFS

FRUIT FLY THREAT--THE Tasmanian Department of Agriculture claims to have uncovered a racket in fruit smuggling to the State involving Queensland fruit, Victorian packaging and South Australian labels. The Minister for Agriculture, Mr Beswick, yesterday directed port fruit inspectors to take immediate action to end the racket. He said the produce was coming from parts of Queensland affected by fruit flies and was threatening Tasmania's multi-million dollar industry. The inspectors have found several consignments in the past week, including one on Tuesday, involving attempts to smuggle Queensland avocados and tomatoes in general vegetable consignments to Tasmania. Mr Beswick said: "The people involved are trying to import fruit and tomatoes from prohibited areas of Queensland without going through the normal inspection procedures. [Peter Dwyer] [Canberra THE AUSTRALIAN in English 30 Sep 82 p 3]

CSO: 5400/7513

## HONDURAS

### PINE WEEVIL DESTROYING YORO FORESTS

Tegucigalpa LA TRIBUNA in Spanish 6 Oct 82 p 36

[Text] The destruction of all the coniferous forests in the department of Yoro, caused by the attacks of the dreaded pest known as "pine weevil," has cost the country millions in losses.

A source close to the Honduran Corporation for Forest Development (COHDEFOR) reported that 650 hectares of pine trees have been affected and that the disease is advancing to the department of Olancho.

"Pine weevil" appears in cycles, every 20 years. In 1962 it also attacked the Yoro forests and since then it was known that steps should be taken to prevent the reappearance of the pest.

#### Rapid Expansion

The insect, of the coleopterous group, penetrates between the bark and the first layers of the pine wood, slowly killing the pine tree.

Its presence was detected about a month ago and a committee of the COHDEFOR immediately harrowed the affected area, when its rapid expansion became known.

Soon research will be carried out by air, it being feared that the damages might be even greater.

#### Economic Resources Are Lacking

It became known that at this time the COHDEFOR cannot start control work and elimination of the pest, because it lacks economic resources.

Nevertheless, it was learned that as soon as the presence of the insect became known, specialized personnel of the agency carried out necessary research and a special plan was evolved to combat it.

Upon being consulted, persons engaged in forestry development expressed their profound worry and urged the COHDEFOR to check the danger.

It was also pointed out that in this case a request might well be made for aid from international institutions, given the critical economic situation of the country.

The COHDEFOR apparently had wanted to keep the matter confidential. However, the source thought that the disclosure of the information would not affect the marketability of the wood, since it can easily be verified that the wood that is exported by Honduras is not at all diseased.

8255  
CSO: 5400/221

NICARAGUA

BRIEFS

PLAQUE IN OMETEPE--Managua--A fungus-vegetal disease is causing large-scale losses of sesame seed, tobacco, beans and other basic grain crops on the Island of Ometepe, according to reports by growers in the area. The Pedro Joaquin Chamorro Cardenas cooperattive, which has 105 members with headquarters in Esquipulas on the Island of Ometepe, has been suffering losses without finding a remedy for the problem in spite of meeting with agricultural experts. The only food crop which has not been affected is the banana. The harmful effects of what the farmers call "Coyolillo" do not reach it because of its height. Eirain Cruz Rodriguez, secretary of the cooperative, explained to our correspondent that 500 plots have been affected by the "Coyolillo," a type of grass that grows wild in the country, covering large areas and thwarting the growth of sesame seed, beans, corn, tobacco and vegetables that grow at low altitudes. Neither pesticides nor plowing have been successful in eliminating the "Coyolillo" because it produces a long root which runs deep like "coyolitos" making eradication more difficult, because when the root is cut, a deeper section always remains and begins to grow, according to the spokesman. The above-mentioned herb, which according to the members of the cooperative in Ometepe has not been correctly classified, has been spreading on the island into areas of traditional crop production. Ometepe produces watermelon, pipianes, corn, beans, rice, sesame seed, several types of tobacco and bananas. Ometepe is a rich agricultural area that supplies cities like Rivas, Nandaime, Granada and Carazo with its products. In a graphic report by Cruz Flores, we described some of the activities of the area, particularly relating to tobacco production. Many farmers of the area belong to cooperatives and receive financing from TANIC and MIDINRA. [Text] [Managua LA PRENSA in Spanish 17 Sep 82 p 12] 9787

CSO: 5400/2006

RESEARCH OFFICIAL REPORTEDLY CORRECTS COTTON PEST ERRORS

Kaduna NEW NIGERIAN in English 17 Sep 82 p

[Letter to editor by Dr. V. B. Ogunlela, Chairman, Fiber Research Program, Institute for Agricultural Research, ABU, Samaru--Zaria]

[Text]

THIS is in response to the article published on page 12 of your issue of 9th August, 1982 entitled "Cotton" Pests and diseases control" written by Dr. Biodun Noah.

The Institute for Agricultural Research (IAR), Samaru, has the national mandate for research on cotton and virtually all the research work on this crop for the past three decades has been done at IAR, a fact we are sure is well known to you as a well-informed editor of a leading national newspaper.

We therefore believe that it would have been proper if you had verified information contained on such an important subject.

The importance of problems associated with cotton production in Nigeria was thoroughly highlighted and discussed in a recent national symposium on cotton production held at Ahmadu Bello University to which you were also invited.

Our major concern and the object of writing this rejoinder is your readers, our clients, who may get the erroneous impression that the contents of the article are relevant to Nigeria.

In view of this we would like to point out the following: (i) the boll weevil does not exist in Nigeria; (ii) the pink bollworm is a pest of minor importance here, there are however other bollworms which are very important.

(iii) *Heliothis zea* is found only in the Americas. Another species *H. armigera* is an important pest of various crops, including cotton, in Nigeria.

(iv) There are a number of

other important pests of cotton in Nigerian which have not been mentioned in the article.

(v) With regard to chemical control of cotton pests, the trend now is to move away from more toxic and persistent organochlorine and organophosphorous compounds.

(The institute's recommendations for pest management in cotton now include the use of synthetic pyrethroids which are much safer to use and are potentially less harmful to the environment.

(vi) Fusarium and Verticillium wilts of cotton are of no importance in Nigeria. It is even more absurd to recommend their control by soil fumigation.

(vii) The use of organomercurial compounds has been discontinued in Nigeria because of its inherent hazards to man, livestock and the environment.

Much safer chemicals which are now available are used now by the Nigerian Cotton Board in treating all seeds distributed to farmers.

(viii) The virus diseases mentioned in the article, to the best of our knowledge, does not exist in Nigeria.

(ix) It is true that we have bacterial blight of cotton which occurs essentially as seedling blight and angular leaf spot. However, the more damaging phase of the disease called "backarm" does not occur in Nigeria.

We do hope that we have made our points abundantly clear and trust that you will publish this rejoinder at your earliest.

COTTON VERTICILLIUM WILT FUNGUS STUDIED

Tianjin SHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 3,  
Sep 82 pp 145-148

[Article by YAO Yaowen [1202 5069 2429], FU Cuizhen [0265 5050 4176], et al.:  
"Preliminary Studies on Physiological Forms of Cotton Verticillium Wilt  
Fungus"]

[Summary] Different hosts, including nine cultivars belonging to three species of *Gossypium* (*G. hirsutum*, *G. barbadens*, *G. arboreum*) were used for identifying the physiological form of *Verticillium dahliae* Kleb. Ten isolates of cotton Verticillium wilt fungus collected from eight provinces were identified and classified into three forms. Form I was highly pathogenic to three species of *Gossypium*, mainly including the "Jin Yang" strains of Shanxi Province. Form II was less pathogenic to all tested hosts. This form included mainly the "He Tian" and "Che Pai Zi" strains of the Xinjiang Uyghur Autonomous Region. The pathogenicity of Form III was between that of Form I and Form II. This form mainly included the strains of eight other counties of six provinces.

POTATO VARIETIES TESTED FOR RESISTANCE TO BACTERIAL WILT

Tianjin ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 3,  
Sep 82 pp 149-152

[Article by ZHANG Lianshun [1728 5114 7311] et al: "Studies on Resistance of Sweet Potato Varieties to Bacterial Wilt"]

[Summary] From 1977 to 1981 more than 500 sweet potato varieties from domestic sources and abroad were tested in some severely epidemical regions of bacterial wilt in Fujian for determining their resistance. The results showed that none of them was immune, but there was considerable variation among their disease incidence. Of these varieties, 17 were highly resistant (disease incidence 0.1 - 10 percent and its index 1 - 5), and 88 varieties were moderately resistant (disease incidence less than 11 - 39 percent and its index 6 - 20).

According to the recorded data in recent years from many epidemical regions, it was also proved that the depression of resistance of these varieties occurred after continuous planting for 2 - 3 years, and it was variable among

different varieties. Therefore, in order to prevent the bacterial wilt of the sweet potato, it is necessary to adopt some measures, such as changing the variety annually, continuous selecting of highly resistant varieties, planting new resistant varieties, etc.

#### EXPERIMENT ON SPINACH STUNT MOSAIC DISEASE REPORTED

Tianjin ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 3, Sep 82 pp 153-156

[Article by TIAN Wenhui [3944 2429 2585] et al.: "Studies on Stung Mosaic Disease of Spinach"]

[Summary] A spinach stunt mosaic virus was isolated in the spring of 1981 in a spinach field on the outskirts of Beijing. The spinach infected with this virus appeared dark green with yellow mosaic. The leaves were crinkled and malformed, and the plants were severely stunted.

The host range has been tested by sap inoculation. The virus can infect 19 species of plants, including the families Leguminosae, Solanaceae, Chenopodiaceae, etc. It is transmissible by the aphid (*Myzus persicae*) in a nonpersistent manner. The thermal inactivation point is 70°C, dilution end point is  $10^{-4}$ ~ $10^{-5}$  and longevity in vitro is 3 days.

The virus was purified from *Chenopodium quinoa* or *Gomphrena globosa* by means of chloroform clarification, 10 percent PEG-6000 precipitation and two cycles of differential centrifugation. Electron microscopy revealed that the isometric virus particles were 24-25 nm in diameter. The examination of the sedimentation pattern of this virus has given three S values--57S, 94S and 113S. The antiserum titer prepared for this virus is 1:512.

From the data obtained here a tentative conclusion has been made--that the agent of spinach stunt mosaic disease is a strain of broad bean wilt virus.

#### VIRUSES INFECTING SACCHARINE MELON ISOLATED

Tianjin ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 3, Sep 82 pp 157-162

[Article by YIN Yuqi [1438 3768 3823] et al.: "Isolation and Identification of Viruses Infecting Saccharine Melon in Xinjiang"]

[Summary] We investigated and collected 19 samples of Saccharine Melon (*Cucumis melo* var. *saccharinuo melo*) and other Cucubits during 1980-81 in Shihezi, Tulufan and Changji, Xinjiang.

The samples were identified on the basis of host range, serology and electron microscopy. Two entities of virus were detected from these samples.

The host range of the first group is wide. Infected are *Cucurbitaceae*, *Lecuminosae*, *Solanaceae*, *Chenopodiaceae*, *Compositae* and others. A clear

precipitate line occurs with antisera against CMV in an immunodiffusion test. The spheroidal virus particles have been observed by electron microscopy. The group has been determined to be a strain of CMV.

The second group infects *Cucurbitaceae*, *Leguminosae* and *Chenopodiaceae*. A clear precipitate line occurs with antisera against WMV-2. The filamentous virus particles have been observed by electron microscopy. The group has been determined to be WMV-2. WMV-2 is most prevalent on Saccharine Melon in Xinjiang.

#### DISTRIBUTION PATTERN OF ORIENTAL ARMYWORM STUDIED

Tianjin ZHIWU BAOHU XUEBAO [ACTA PHYTOHYLACTICA SINICA] in Chinese No 3, Sep 82 pp 173-178

[Article by MENG Heping [1322 0735 1627] et al.: "A Preliminary Study of the Field Sampling Technique of the Population of the Oriental Armyworm *Mythimma separata* (Walker)"]

[Summary] Based on the study of the distribution pattern of the oriental armyworm population, the sampling technique, theoretical sampling numbers and sequential sampling were studied.

1. Comparing the degree of accuracy of several simple random samplings, we consider the chessboard sampling method to be the best one in the investigation of the egg stage, while the parallel-line sampling method can be applied in the investigation of the larval and pupal stages.
2. By calculation, the theoretical sampling numbers of the different developmental stages of the oriental armyworm were defined, and the relation between the theoretical sampling number and relative variance was analyzed.
3. Using the sequential sampling method, the chemical control standard of the oriental armyworm population in the larval stage in the field was tested.

To analyze the larval quantities by means of sequential sampling, the following equations were used:

$$\begin{cases} d_0 = 3.84n - 40.738 \\ d_1 = 3.84n + 40.738 \end{cases}$$

## AREA DIFFERENCES OF PLANTHOPPERS NOTED

Tianjin ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 3,  
Sep 82 pp 179-186

[Article: "Migration and Occurrence of White-backed Planthoppers and Brown Planthoppers in Southwest China"]

[Summary] In southwest China, migration and occurrence of white-backed planthoppers (*Sogatella furcifera* Horvath) and brown planthoppers (*Nilaparvata lugene* Stal) have different features from those in the eastern part of China as a result of the combined effect of different geographic location, topography, climate, cultural system, etc.

The planthoppers immigrated abundantly into the southeastern part of Guizhou Province at an earlier season, with the white-backed planthoppers being the predominant species. In Yunnan Province, immigration appeared first in the southern part and then in the north, and the predominant species was the brown planthopper, followed by the white-backed planthoppers. In Sichuan Province, immigration appeared first in the eastern part and then in the west. The migratory paths of that generation causing major damage were varied, and the migrations of short and middle distances occurred frequently in the summer. Therefore, there were two major damage periods on middle rice during some years.

As for characteristics of occurrence, in normal years planthoppers usually do more serious damage in the eastern and southern parts of the above three provinces than in the western and northern parts. The nearest planthopper populations were the principle sources of emigration doing harm to middle and late rice. It has been found that the planthopper could be checked by various kinds of natural enemies.

## VARIOUS FOOD PLANTS TESTED ON MOTHS

Tianjin ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 3,  
Sep 82 pp 187-192

[Article by WANG Jingru [3769 2417 0320] et al.: "Influence of Various Food Plants on the Growth and Fecundity of *Agrotis segetum*"]

[Summary] Various food plants were tested with the larvae and moths of *Agrotis segetum* (Schiff.) to see their influence on the number of eggs laid. The results show that when larvae fed on leaves of Chinese cabbage, cotton, and corn, along with some wild herbs, the moths emerging laid more eggs and lived longer than did those emerging from the larvae fed on other plants. The larval stage of those fed on *Chenopodium* spp. was much shorter than that of those fed on *Abutilon* spp., and the percentage of mortality was also lower. Moreover, body weights of the pupae whose larvae fed on Chinese cabbage or *Chenopodium* were heavier than those from larvae which fed on potato.

Results showed that the moths laid more eggs (1.99 - 14.06 times) when feeding on honey and sugar or nectar of *Aster* or *Helianthus* flowers than did those living on Chinese cabbage or alfalfa flowers or water alone.

It seems that supplementary diet taken at the adult stage has a more important effect on fecundity than the quality of foodstuff taken at the larval stage.

#### NUCLEAR POLYHEDROSIS VIRUS OF COTTON BOLLWORM STUDIED

Tianjin ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 3, Sep 82 pp 193-197

[Article by ZHANG Guangyu [1728 0342 5940] et al.: "Bioassay of the Nuclear Polyhedrosis Virus of the Cotton Bollworm, *Heliothis armigera*"]

[Summary] Bioassay of the isolated S01-43 nuclear polyhedrosis virus (SEV) was conducted on early third-instar larvae of *H. armigera* which were individually reared on an artificial diet contaminated with the virus. The regression equation between dosage and mortality was  $y = 3.3387 + 0.484x$ . The LD<sub>50</sub> value and 95 percent fiducial limits were 2707 PIB and 1134 ~ 6455 PIB/g of diet, respectively. The LT<sub>50</sub> values for  $5 \times 10^4$  and  $5 \times 10^5$  PIB/g of diet were 7.36 and 6.27 days, respectively. Sol-43 NPV stored for 3 years in a refrigerator (4°C) lost 79.03 percent of its LD<sub>50</sub> activity, but that stored for 3 years at room temperature (approximately 22°C on the average) lost 91.21 percent of its LD<sub>50</sub> activity.

#### ALTITUDE, PRECIPITATION AFFECTS MILLET BORER DAMAGE

Tianjin ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 3, Sep 82 pp 198-203

[Article by LIU Yongfu [0491 3057 4395] and CHENG Huiling [4453 5610 5376]: "The Geographical Distribution and Control of Millet Borer, *Chilo infuscatella* (Snellen), in Luliang Mountainous Region"]

[Summary] The altitude of the Luliang mountainous region ranges from 700 to more than 1,400 meters. It was found that damage done to the millet by the millet borer, *Chilo infuscatella*, changed with the altitude, being severest in the range from 1,100 to 1,300 meters. Above 1,500 meters, no incidence was observed.

There was only one generation of the borer annually. Winter was passed almost exclusively in the millet stubble as mature larvae in cocoons. If June was dry, the overwintering larvae could not readily pupate and incidence was less severe. When the precipitation reached 20 mm by mid-June (which was quite unusual), the larvae could pupate promptly and injury to millet would be severe that very year.

Based on the estimated loss and economic threshold, it would not be difficult to decide if a millet field needed chemical control.

## BROWN PLANTHOPPER INSECTICIDE RESISTANCE NOTED

Tianjin ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 3,  
Sep 82 pp 205-210

[Article by TANG Zhenhua [0781 2182 5478] et al.: "A Preliminary Study on the Resistance to Insecticides of Brown Planthopper (*Nilaparvata lugens* Stal)"]

[Summary] A survey on the susceptibility of the brown planthopper collected from different areas of Zhejiang Province to  $\gamma$ BHC, malathion and parathion was tested by topical application in 1977. The data obtained showed that resistance of the brown planthopper to  $\gamma$ BHC and malathion appearing in paddy rice-fields between June and early July in the areas of this province was 2.4-6.8 and 3 times respectively in comparison with that of Wucun Juxian County. The autumnal generation was 4.7-fold resistant to  $\gamma$ BHC as compared with LD<sub>50</sub> of the immigrant summer generation. The resistant laboratory strain originating from the autumnal generation in Dongyang County was 11.5 times resistant to  $\gamma$ BHC as compared with the susceptible strain from the immigrant summer generation in Wucun Juxian County. It was found that the susceptibility of the above-mentioned strain ( $\gamma$ BHC-resistant strain) to organophosphates, such as malathion, parathion and sumithion, was the same as that of the susceptible strain.

## NEW INSECTICIDE TESTED FOR CONTROL OF RICE INSECTS

Tianjin ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 3,  
Sep 82 pp 211-216

[Article by SHANG Zhizhen [1424 4460 3791] et al.: "Studies of a New Insecticide--Thiocyclam Hydrogen Oxalate--for the Control of Rice Insects"]

[Summary] Based on the results of 3 years of laboratory and field experiments, it was found that thiocyclam hydrogen oxalate is very effective against the rice striped borer (*Chilo suppressalis*), the yellow stem borer (*Tryporyza incertulas*), the rice leaf folder (*Chaphalocrocis medinalis*) and the rice thrip (*Baliothrips biformis*). The characteristics, effectiveness and mode of action of thiocyclam hydrogen oxalate are discussed. Results of root-zone application showed that thiocyclam hydrogen oxalate is also a good systemic insecticide when used at a rate of 1.5 kg ai/ha. It is very effective in controlling rice borers and thrips by root-zone application.

In view of the fact that thiocyclam hydrogen oxalate belongs to a novel class of insecticides, including cartap and "diemhypo," which presumably acts by the interruption of the nerve impulse transmission at the synapses by blocking the acetylcholine receptors, it is a promising compound for the control of rice insects resistant to organochlorine, organophosphorus and caroamate insecticides.

9717  
CSO: 5400/4108

SENEGAL

INSECTS DAMAGE CROPS IN LOUGA REGION

Dakar LE SOLEIL in French 16-17 Nov 82 p 10

[Article by Birame D. Faye: "The Crops Situation Is Alarming"]

[Excerpt] The main topic in the Louga region is the alarming situation of the crops as a result of two events which took place, one as the plants were flowering and forming ears and the other when some of the salvaged seedlings had raised people's hopes.

The various departments of the CRD [Regional Development Commission] presided by Mamadou Gayle, deputy chief for development, discussed this subject at length deplored the disaster which has affected almost the entire Ndiambour.

The representative of the Department of Agriculture delivered a report on the agricultural situation. In view of the current situation with crops, the next agricultural output is in jeopardy everywhere but in the department of Linguere.

But what are the causes of this disaster? In one of our reports we mentioned that insect infestation had been registered in some parts of that region. As time went by, the infestation spread and pests were all over the region leaving devastation on their wake.

The first attack came during the flowering period. The small locust and the amsactas went after fields planted with beans, bref [citrullus colocynthis] and especially millet. The fields were reseeded (three times) but a second attack came as the ears were forming and neither seedlings nor young shoots were able to survive. The plunderers destroyed even the stalks. Only the peanut crops managed to survive but in the end it fell to the small locusts.

A few fields of millet, rescued during the maturing period, were attacked by caterpillars and by cantharides which stripped them down to the ears.

One will ask how this could be allowed to happen when we really have services for pest control and plant protection.

Initially the farmers went after the insects with primitive means after reporting the presence of the destructive pests.

Help came but after a long delay which meant that the insects were able to repeat their attack and to spread very quickly particularly in a region which has an estimated planted acreage of 500,000 hectares.

The most deplorable part of this control campaign is its bad organization: it does not have enough logistic and material means and, more specifically, uses products which are ineffective.

Right now, the destructive pests are still in the area and have started infesting the dwellings. In the district of Sakal, for instance, it is difficult to have a meal inside the houses and even less outdoors because insects are everywhere. It is a total disaster area and the inhabitants are calling for help. The same applies to the Touba-Linguere area where not a single stalk of millet remains standing.

The supervisor staff has suggested that for the next farming season peasants be given the necessary fungicides and products to protect their crops when seeding.

Rescue teams should also be created to help in the event of another infestation.

8796  
CSO: 5400/32

SWEDEN

BRIEFS

BARK BEETLE CONTROL SUCCESS--The fight to control the eight-tooth spruce-bark beetle has been effective and can be to a certain extent reduced in intensity. For the 1983 budget, only 6 million kronor have been requested as appropriations for control efforts, compared to 14 million kronor in 1982. The bark beetles are now geographically limited to only a few areas. Värmland has been the hardest hit, with from 60 to 70 percent of the damage. This year, 75,000 traps have been used, half of the number of the previous year, but in 1983 it is expected that 30,000 will be sufficient. In 1978, 480 trees were killed in Värmland by the insect infestation, last year [1981] the number was 77,000 and so far this year 27,000, as shown by air survey. [Stockholm DAGENS NYHETER in Swedish 17 Nov 82 p 5]

CSO: 5400/2503

MORE THAN 80 PERCENT OF ARABICA COFFEE ATTACKED BY CBD

Dar es Salaam DAILY NEWS in English 10 Nov 82 p 3

[Excerpt]

MORE than 80 per cent of the aromatic mild *arabica* coffee, Tanzania's major foreign exchange earner, has been attacked by Coffee Berry Disease (CBD) which is on the increase, according to the Coffee Authority of Tanzania (CAT).

The CAT Executive Chairman, Ndugu Sangito Kaaya, told *Shikata* that of the country's 117,904 hectares under the mild *arabica* coffee plantations, 94,908 hectares were infested with CBD.

Out of 1.21 billion/- in foreign exchange realised during 1981/82 season, some 0.98 billion/- was obtained from the sales of mild *arabica* coffee, both to quota and non-quota markets — constituting about 81 per cent of the crops earnings.

The disease was first experienced in the 1974/75 coffee season and has spread from 32,097 hectares to the present 94,908 hectares. Areas

badly affected are Kilimanjaro Region where out of 66,635 hectares, 60,967 are under the disease mainly on the small holder plantations.

Other areas are Arusha with 13,114 hectares out of 16,530 are affected by the disease. In the coffee farms some 6,900 hectares are under CBD.

In Tarime only 300 hectares of the total 1,830 hectares are affected, while in Mbinga 9,467 hectares out of 17,333 are affected. Lushoto District is equally badly hit, with 4,430 hectares out of 6,158 ha. are in danger.

As a result of the disease this year's coffee production target is expected to be less by 1,000 tonnes than that of last season of 18,200 tonnes. In money terms the earning from the crop will be less by 24.95 million/-.

CSO: 5400/64

## BRIEFS

NEMATODA INFESTATION--As of 5 October, in sowing and transplanting 10th-month rice, Cuu Long Province has achieved 92 percent of plan, in terms of area. The peasants are now concentrating on transplanting the remaining areas, especially the low-lying ones, using the technique of dense planting. The transplanted rice is growing properly, due to favorable weather, regular rainfalls and high tides. Pests seem to be on the rise, too. Nearly 10,000 hectares were affected by pests. In particular, Nematoda infestation covered over 50 percent of the area, with concentrations on the low-lying districts of Tam Binh, Bing Minh and Vung Liem. The agricultural service in coordination with Can Tho College, held a scientific conference to disseminate to installations the means of preventing, controlling and exterminating Nematoda, and saving the rice. In affected areas, the peasants must build embankments around the fields to limit contagion, use every means possible to lower water levels in the fields, and apply insecticide. Good results were achieved in places where these measures were carried out correctly. [Text] [Hanoi NHAN DAN in Vietnamese 16 Oct 82 p 1] 9213

RICE BLAST EXTERMINATION--Since the beginning of the year, cadres and workers of the Southern Insecticide Corporation have strived to procure part of supplies and raw materials for the production of insecticides. In light of shortages of supplies, the corporation has sent out surplus labor to procure kaolin, and in 80 days and nights these workers have gathered more than 2,000 tons of kaolin, an extender, enough to meet the needs of insecticide production. Based on the requirements of Phu Tan District peasants, An Giang Province needs insecticide to exterminate blast, which is now damaging nearly 2,000 hectares of rice. The corporation has sent technical cadres into the affected area, and within a short time they have successfully devised Dinadin, an antifungal drug. Using that insecticide, Phu Tan District exterminated blast in 3 days, thus saving the rice. The corporation has paid attention to strengthening economic and technical management, has drawn up plans for reducing wastes in supplies and raw materials from 5 to 10 percent, and has lowered production costs while ensuring product quality. So far, the corporation has supplied the agricultural production sector with more than 3,000 tons of various brands of insecticide. [Text] [Hanoi NHAN DAN in Vietnamese 11 Oct 82 p 2] 9213

CUU LONG 10TH-MONTH RICE--Cuu Long Province has planted 10th-month rice on 175,000 hectares or 99 percent of the planned area. As a result of recent rainfalls, more than 12,700 hectares of this rice have been affected by blight and insects, especially stem borers. The province has, however, adopted effective measures to prevent these insects from spreading to other localities. [Hanoi Domestic Service in Vietnamese 2300 GMT 26 Oct 82]

LEAFHOPPERS IN CUU LONG--By the end of October, Cuu Long Province had planted 10th-month rice on 174,300 hectares, overfulfilling the planned norm by 5 percent. Although this rice is now developing satisfactorily, as many as 15,000 hectares of it have been affected by leafhoppers. [Hanoi Domestic Service in Vietnamese 1430 GMT 6 Nov 82]

CSO: 5400/4331

END